



Beaver Dam - White River, Arkansas

**U.S. Army Corps
of Engineers**
Little Rock District

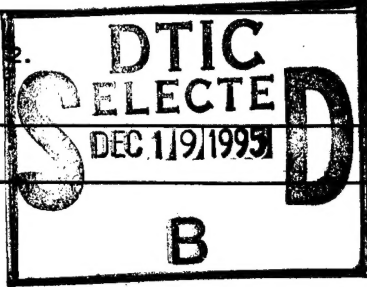
Beaver Dam Secant Pile Wall Completion Report

19951218 079

DTIC QUALITY INSPECTED 1

OCTOBER 1995

Volume 2

Security Classification		
DOCUMENT CONTROL DATA - R & D		
(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)		
1. ORIGINATOR'S NAME (Corporate author) DEPARTMENT OF THE ARMY LITTLE ROCK DISTRICT, CORPS OF ENGINEERS 700 WEST CAPITOL AVENUE LITTLE ROCK, ARKANSAS 72203		2a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED
3. REPORT TITLE BEAVER DAM SECANT PILE WALL COMPLETION REPORT . . . VOLUME 1		2b. GROUP
4. DESCRIPTIVE NOTES (Type of report and inclusive dates) FINAL CONSTRUCTION COMPLETION REPORT		
5. AUTHOR(S) (First name, middle initial, last name) PATRICK W. JORDAN LARRY PITCHFORD		
6. REPORT DATE 30 OCTOBER 1995		
7a. TOTAL NO. OF PAGES 565	7b. NO. OF REFS	
8a. CONTRACT OR GRANT NO. DACW03-92-C-0039	9a. ORIGINATOR'S REPORT NUMBER(S) BEAVER DAM HISTORICAL DOCUMENT (FILED BY DOCUMENT COMPLETION DATE OCTOBER 1995)	
b. PROJECT NO CC160	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)	
c.		
d.		
10. DISTRIBUTION STATEMENT DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED.		
11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY LITTLE ROCK DISTRICT
13. ABSTRACT <p>The report presents a comprehensive project history, beginning in 1966 with the initial Beaver Lake (located near Eureka Springs, in northwest Arkansas, U.S.A.) impoundment against Dike 1, which produced observable surface seepage from five areas downstream of Dike 1. Seepage continued to increase due to limestone rock weathering and solutioning, combined with removal of colloidal sized soil material from the overburden and weathered rock zones, particularly along two faults that formed a graben beneath Dike 1. The pervasive seepage distress evolved until a muddy water boil was discovered during a "pool of record" event in December 1984, and ultimately warranted a remedial construction project. The selected method for alleviating the seepage distress consisted of a 1,475-foot-long concrete diaphragm wall located immediately upstream of Dike 1 and penetrating to depths of 80 to 185 feet. Utilizing a request for proposals/technical evaluation/price negotiation contractual process, the construction was accomplished by two separate joint venture contractors under two contracts. The first contractor performed site preparation and constructed an upstream work platform; however, the contractor failed to complete the project because the specialized rock mill excavation equipment could not excavate the proposed overlapping trench segments into the high compressive strength unweathered rock that typically exceeded 15,000 psi. The inability to construct the wall resulted in the first contract being terminated for convenience to the Government. The second contractor, after overcoming shaft excavation instability problems, completed the wall using a large diameter down-the-hole air percussion hammer drill for excavation. A total of 739 overlapping, 34-inch diameter shafts were drilled on 24-inch centers. The shafts were filled with concrete using the gravity tremie method; thus, creating a continuous concrete secant pile wall with a minimum width of 18 inches. The completed wall successfully eliminated all observable seepage downstream of the dike, and significantly reduced piezometric levels. The project construction was completed in December 1994, at an approximate cost of \$33,535,000.</p>		

DD FORM 1 NOV 88 1473

UNCLASSIFIED
Security Classification


AGO 5698A

4. DISTRIBUTION STATEMENT AND ADDITIONAL NOTICES.

a. **DISTRIBUTION STATEMENT** - Distribution authorized to US Government agencies only; critical technology (March 1995). Other requests for this document shall be referred to HQ ACC/DR, 204 Dodd Blvd, Suite 226, Langley AFB, Virginia 23665-2777.

b. **WARNING** - This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C. 2751, et seq.) or Executive Order 12470. Violation of these export-control laws is subject to severe criminal penalties. Dissemination of this document is controlled under DoD Directive 5230.25 and AFI 61-204.

c. **DESTRUCTION NOTICE** - For classified documents, follow the procedures in DoD 5220.22-M, Industrial Security Manual, sections 11-19, or DoD 5200.1-R, Information Security Program Regulation, Chapter IX. For unclassified, limited documents, destroy by any method that will prevent disclosure of contents or reconstruction of the document.



JOHN C. THOMPSON, Lt Col, USAF
Chief, Automated Mission Planning Section

Attachment
Distribution List

BEAVER DAM COMPLETION REPORT

APPENDIX - G

APPENDIX G

Explanation of Terms Used

<u>Term</u>	<u>Meaning</u>
Pile #	The Number Assigned to each pile, beginning at 0 on the northern terminus of job and ending with 738 at southern terminus of contract.
Drilling Date	The date or dates the pile was drilled.
Rig #	Either Rig 1 (Mounted on a Link Belt 318 crane) or Rig 2 (Mounted on a Manitowoc 4100 crane).
Excavation Method	Type of Hammer Used.
Drill Footage	Amount of footage drilled in the time frame given.
Redrill Footage	Amount of redrilling necessary due to down staging or other reason given.
Drill Time	Amount of time it took to drill the pile to the depth given.
Redrill Time	Time interval required to excavate redrilled portion of the pile.
Penetration Rate	The rate (ft/hr) at which pile was drilled or redrilled.
Concrete Date	The date on which the corresponding spec. concrete or non-spec. concrete/grout was placed for stabilization purposes.
Spec Concrete	The specification concrete used to make the wall.
Non-Spec Concrete	Concrete used to stabilized the drill hole.
Grout	Grout used to stabilize the drill hole.
Theoretical Vol.	The volume of grout, non-spec concrete or spec concrete calculated to fill the drill hole.
Overbreak	A percentage difference between the calculated volume of grout or concrete to fill a drill hole and the amount actually required.

n For

&I

ed

tion

tion/

ility Codes

all end/or

Special

Dist

A-1

<u>Term</u>	<u>Meaning</u>
Verticality	The amount and direction of deviation from perfect verticality.
S-ARC	The amount of over lap of a pile in inches between the adjacent two piles (one to the north and one to the south) calculated from the verticality of the 3 adjoining piles.
Quality Coring	Tells if the pile was cored to check concrete quality.

APPENDIX G

Part 1 Contractual Piles

Part 2 Conforming Piles

**Part 3 Production Rates
(Various Materials)**

Blue Skut

CONTRACTUAL PILE DATA

Secondary Pile # 0
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/16/92	1	DHD130A	81		5.04		18.07		11/16/92			21	18.9	11.0%

Total Drill Time = 5.04 Hours
Average Penetration Rate = 16.07 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1° South X 1° East
S-ARC North = na
S-ARC South = 28.29

Quality Coring: None.

Comments:

Primary Pile # 1
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/30/92	1	DHD130A	82		4.22		19.43		12/01/92			20.75	19.1	8.4%

Total Drill Time = 4.22 Hours
Average Penetration Rate = 19.43 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = na
S-ARC South = 26.16

Quality Coring: None.

Comments:

Area "A"

CUT-OFF WALL CONSTRUCTION

Total Redrill Time =

Average Penetration Rate =

None

At Full Depth =	0°N/S X 4.5° East
S - ARC North =	28.29
S - ARC South =	28.16

Comments:

Area "A"

CUT-OFF WALL CONSTRUCTION

Total Redrill Time =
Average Penetration Rate =
None

At Full Depth =	0° N/S X σ E/W
S - ARC North =	26.18
S - ARC South =	28.14

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment		Drill Footage			Pure Drill Time			Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)									
01/19/93	1	DHD130A		81			8.71			9.30				23		18.9	21.6%

Total Redrill Time =
Average Penetration Rate =

Vertically Information		1° North X 36° East
At Full Depth =		
S - ARC North =	28.16	
S - ARC South =	30.01	

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete Volume (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
03/29/93	2	DHD130A		82		8.66		9.47	03/30/93			23	19.1	20.1%

Total Redrill Time =
Average Penetration Rate =
None

Verticality Information

At Full Depth =	3.5° North X 2° West
S - ARC North =	28.14
S - ARC South =	18.78

Comments:

Secondary Pile # 6 Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Over/break
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
02/03/93	1	DHD130A	82		8.58			9.56		02/08/93			24	19.1	25.3%

Secondary Pile # 8
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)
02/18/93	2	DHD130A	81		10.74		7.54		
Total Drill Time = 10.74 Hours					Concrete Date 02/20/93				
Average Penetration Rate = 7.54 Feet / Hour					Spec. Concrete (CU.YD.) 24				
Total Redrill Time = None					Theoretical Volume (CU.YD.) 18.9				
Average Penetration Rate = None					Overbreak 28.9%				

Total Drill Time = 10.74 Hours
Average Penetration Rate = 7.54 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information

At Full Depth = .59° North X .59° West
S - ARC North = 33.80
S - ARC South = 22.80

Quality Coring: None.

Comments:

Primary Pile # 9
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)
04/02/93	2	XL-24	81		3.90		20.77		
Total Drill Time = 3.90 Hours					Concrete Date 04/07/93				
Average Penetration Rate = 20.77 Feet / Hour					Spec. Concrete (CU.YD.) 24				
Total Redrill Time = None					Theoretical Volume (CU.YD.) 18.9				
Average Penetration Rate = None					Overbreak 28.9%				

Total Drill Time = 3.90 Hours
Average Penetration Rate = 20.77 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information

At Full Depth = 2° South X 1° East
S - ARC North = 21.05
S - ARC South = 33.79

Quality Coring: None.

Comments:

Secondary Pile # 10
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/23/93	2	CLUSTER	81		8.66		9.35		02/24/93			23	18.9	21.6%

Total Drill Time = 8.66 Hours
Average Penetration Rate = 9.35 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.47" North X 1.87" ast
S--ARC North = 22.80
S--ARC South = 24.23

Quality Coring: None.

Comments:

Primary Pile # 11
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/02/93	2	XL-24	82		3.66			22.40	04/03/93			22.5	19.1	17.5%

Total Drill Time = 3.66 Hours
Average Penetration Rate = 22.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.75" North X 1.5" East
S--ARC North = 33.79
S--ARC South = 23.64

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
12/07/92	1	DHD130A	81		19.85		4.08		12/09/92			21.5	18.9	13.7%

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)				
03/29/93	2	CLUSTER	82		5.17		15.86			24	19.1	25.3%

Comments: Small Void in Pile.

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HRF)	Redrill (FT / HRF)						
10/16/92	1	DHD130A		80		9.50		8.42		10/21/92		22	18.7	17.6%

Total Redrill Time = None

Quality Coring: 6" 0' to 30' w/pile #17

Primary Pile # 17
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT / HR)	Redrill (HRS)							Redrill (FT / HR)
11/04/92	1	DHD130A	83		4.87		17.04	11/05/92			21	19.4	8.3%	

Total Redrill Time =

Quality Coring: 6" 0' to 30' w/pile #16

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/24/92	1	DHD130A		82		7.92		10.35				20	19.1	4.4%

Total Drill Time = 7.92 Hours
Average Penetration Rate = 10.35 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

Vertically Information	At Full Depth =	1.75" South X 2.5" West
	S-ARC North =	27.81
	S-ARC South =	34.53

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/12/92	1	DHD130A	82		5.05		16.24		11/12/92			21	19.1	9.7%

Total Drill Time = 5.05 Hours
Average Penetration Rate = 16.24 Feet / Hour

• Total Redrill Time =
Average Penetration Rate =
None

Veracity Information

At Full Depth =	4.5° North X 0° E/W
S-ARC North =	25.66
S-ARC South =	17.59

Quality Coring: None.

Comments:

Secondary Pile # 20
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/29/92	1	DHD130A	81		7.66		10.57		10/30/92			21	18.9	11.0%

Total Drill Time = 7.66 Hours
Average Penetration Rate = 10.57 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 1" South X 1.75" West
S-ARC North = 34.53
S-ARC South = 28.06

Quality Coring: None.

Comments:

Primary Pile # 21
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
12/01/92	1	DHD130A	82		8.78			9.34		12/01/92			20.75	19.1	8.4%

Total Drill Time = 8.78 Hours
Average Penetration Rate = 9.34 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0 N/S X 0 E/W
S-ARC North = 17.59
S-ARC South = 22.62

Quality Coring: None.

Comments:

Secondary Pile # 22
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/24/92	1	DHD130A		81		9.12		8.88				22	18.9	16.3%

Secondary Pile # 24
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Redrill	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
12/10/92	1	DHD130A	Drill (FT)	81	Drill (HRS)	16.23	Drill (FT / HR)	4.99	(FT / HR)	12/11/92			21	18.9	11.0%

Total Drill Time = 16.23 Hours
Average Penetration Rate = 4.99 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 30.45
S-ARC South = 31.9

Quality Coring: None.

Comments:

Primary Pile # 25
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Redrill	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/03/93	2	XL-24	Drill (FT)	93	Drill (HRS)	4.50	Drill (FT / HR)	20.67	(FT / HR)	04/04/93			25	21.7	15.1%

Total Drill Time = 4.50 Hours
Average Penetration Rate = 20.67 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4° North X 2° West
S-ARC North = 26.76
S-ARC South = 22.54

Quality Coring: None.

Comments: Overdrilled pile accidentally — Contractor though he was in 90' section

Secondary Pile # 26
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
02/14/93	2	CLUSTER	92		5.00		18.40		
Total Drill Time = 5.00 Hours					Concrete Date 02/19/93				
Average Penetration Rate = 18.40 Feet / Hour					Spec. Concrete (CU.YD.) 25				
Total Redrill Time = None					Non-Spec. Concrete (CU.YD.)				
Average Penetration Rate =					Grout (CU.YD.)				
Verticality Information					Theoretical Volume (CU.YD.) 21.5				
At Full Depth = 1.5" North X 2" East					Overbreak 16.4%				
S-ARC North = 31.9									
S-ARC South = No Overlap at Full Depth Corrected With Conforming Pile.									
Quality Coring: None.									

Comments: Overdrilled hole accidentally - Contractor thought he was in 90' section

Primary Pile # 27
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
04/07/93	2	XL-24	82		4.67		17.56		
Total Drill Time = 4.67 Hours					Concrete Date 04/08/93				
Average Penetration Rate = 17.56 Feet / Hour					Spec. Concrete (CU.YD.) 21.5				
Total Redrill Time = None					Non-Spec. Concrete (CU.YD.)				
Average Penetration Rate =					Grout (CU.YD.)				
Verticality Information					Theoretical Volume (CU.YD.) 19.1				
At Full Depth = 9.81" South X 7.55" West					Overbreak 12.3%				
S-ARC North = No Overlap at Full Depth Corrected With Conforming Pile.									
S-ARC South = 35.92									
Quality Coring: None.									

Comments:

Secondary Pile # 28
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/25/93	2	CLUSTER	82		6.08		13.49		02/26/93			23	19.1	20.1%

Total Drill Time = 6.08 Hours
Average Penetration Rate = 13.49 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.90' North X 3.80' West
S--ARC North = 35.92
S--ARC South = 21.93

Quality Coring: None.

Comments:

Primary Pile # 29
Area "A"

Area 'A'

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/12/93	2	XL-24	82		6.50			12.62		04/14/93		23	19.1	20.1%

Total Drill Time = 6.50 Hours
Average Penetration Rate = 12.62 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" South X 0" E/W
S--ARC North = 21.93
S--ARC South = 31.09

Quality Coring: None.

Comments:

Secondary Pile # 30
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
03/30/93	2	DHD130A	81		10.48		7.73		26.9%

Total Drill Time = 10.48 Hours
Average Penetration Rate = 7.73 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.25" North X 0" EW
S-ARC North = 31.09
S-ARC South = 16.72

Quality Coring: None.

Comments:

Primary Pile # 31
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
04/07/93	2	XL-24	82		4.17		19.66		17.5%

Total Drill Time = 4.17 Hours
Average Penetration Rate = 19.66 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.86" South X 7.14" West
S-ARC North = 16.72
S-ARC South = 16.23

Quality Coring: None.

Comments:

Secondary Pile # 32
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/02/93	2	XL-24	82		4.42		18.55		04/03/93			24	19.1	25.3%

Total Drill Time = 4.42 Hours
Average Penetration Rate = 18.55 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 7.78° South X 1.56° East
S-ARC North = 16.23
S-ARC South = 34.59

Quality Coring: None.

Comments:

Primary Pile # 33
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/12/93	1	XL-24	82		5.00		16.40		07/14/93			23	19.1	20.1%

Total Drill Time = 5.00 Hours
Average Penetration Rate = 16.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5° South X 7.5° West
S-ARC North = 34.59
S-ARC South = 30.04

Quality Coring: None.

Comments:

Secondary Pile # 34
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/22/93	2	DHD130A	80		9.75		8.21		02/27/93			23	18.7	23.1%

Total Drill Time = 9.75 Hours
Average Penetration Rate = 8.21 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" North X 4.17" East
S-ARC North = 30.04
S-ARC South = 27.29

Quality Coring: None.

Comments:

Primary Pile # 35
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/13/93	2	DHD130A	81		11.67			6.94	03/13/93			23	18.9	21.6%

Total Drill Time = 11.67 Hours
Average Penetration Rate = 6.94 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.25" North X 0" E/W
S-ARC North = 27.29
S-ARC South = 17.32

Quality Coring: None.

Comments:

Secondary Pile # 36
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/21/92	1	DHD130A		83		14.41		5.76		10/22/92		21.5	19.4	10.9%

Total Drill Time = 14.41 Hours
Average Penetration Rate = 5.76 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.18" South X 3.88" West
S-ARC North = 17.32
S-ARC South = 31.89

Quality Coring: None.

Comments:

Primary Pile # 37
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
11/13/92	1	DHD130A	81		4.75			17.05		11/13/92			21	18.9	11.0%

Total Drill Time = 4.75 Hours
Average Penetration Rate = 17.05 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" North X .5" West
S-ARC North = 31.89
S-ARC South = 24.09

Quality Coring: None.

Comments:

Secondary Pile # 38
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
11/06/92	1	DHD130A	151		16.78			9.00		11/07/92			38	35.3	7.8%

Total Drill Time = 16.78 Hours
Average Penetration Rate = 9.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.53" South X 0" E/W
S-ARC North = na due to change in depth
S-ARC South = 26.03

Quality Coring: None.

Comments:

Primary Pile # 39
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete Volume (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
12/15/92	1	DHD130A	152		21.30			7.14	12/19/92			38.5	35.5	8.5%

Total Drill Time = 21.30 Hours
Average Penetration Rate = 7.14 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.03" South X .87" West
S-ARC North = 26.03
S-ARC South = 27.66

Quality Coring: NQ 0' to 19.8' (for contractors use)

Comments: PUMP TRUCK USED FOR CONCRETE PLACEMENT.

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
11/02/92	1	DHD130A	151		22.09			6.84		11/03/92			37	35.3	4.9%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: NQ FROM 0' TO 156.5'.

Primary Pile # 41
Area "A"

CUT-OFF WALL EXCAVATION							CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/07/93	2	XL-24	152		8.58		17.72		04/08/93			40	35.5	12.7%	

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Drill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/28/92	1	DHD130A	151		28.83		5.24		11/30/92			38.5	35.3	9.2%

Total Redrill Time =
Average Penetration Rate =
None

Verticality Information

At Full Depth =	1.75" S X 1.25" E
S-ARC North =	46.31
S-ARC South =	27.10

Comments: This pile was drilled to 35' by accident on 3/30/93. It took 13 cu.yd. of spec. concrete.

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment		Drill Footage		Penetration Rate			Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak			
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT / HR)	Redrill (HRS)				Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)
04/13/93	2	DHD130A	152		12.67		12.00				41	35.5	15.5%

Total Redrill Time =

Average Penetration Rate =

None

Veracity Information

At Full Depth =	1.5" S X 1.88" E
S-ARC North =	27.10
S-ARC South =	30.66

Comments:

Secondary Pile # 44
Area "A"

Area A

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/01/93	1	DHD130A	151		25.97		5.81		02/05/93			40	35.3	13.4%

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/18/92	1	DHD130A		151		28.83		5.24	11/21/92			40	35.3	13.4%

Total Redrill Time =
Average Penetration Rate =
None

Vertically Information
 At Full Depth = 2.93" S X 4.89" E
 S-ARC North = 22.52
 S-ARC South = 24.33

Quality Coring: NQ 0' TO 19.0' (For Contractors Use): 6" Joint core 46/47 to 29.7'

Primary Pile # 47
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
12/09/92	1	DHD130A		152	19.57			7.77		12/10/92			38.5	35.5	8.5%

Total Redrill Time =
Average Penetration Rate =
None

3.5" S X 2.5" W

At Full Depth =	24.33
S--ARC North =	29.32
S--ARC South =	

Quality Coring: None.

Comments:

Secondary Pile # 48
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/28/92	1	DHD130A	152		25.00		6.08		10/29/92			37	35.5	4.2%

Total Drill Time = 25.00 Hours
Average Penetration Rate = 6.08 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.55° S X 75° W
S-ARC North = 29.32
S-ARC South = 37.60

Quality Coring: None.

Comments:

Primary Pile # 49
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/17/93	2	DHD 130A	152		12.17		12.49		04/19/93			41	35.5	15.5%

Total Drill Time = 12.17 Hours
Average Penetration Rate = 12.49 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 7.5° N X 2.25° E
S-ARC North = 37.60
S-ARC South = 10.45

Quality Coring: None.

Comments:

Secondary Pile # 50
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/08/93	2	DHD130A	150		25.66		5.85		02/09/93			42	35.0	19.9%

Total Drill Time = 25.66 Hours
Average Penetration Rate = 5.85 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 6' S X 2.2' W
S-ARC North = 10.45
S-ARC South = No Overlap at Full Depth, Corrected with Conforming Pile.

Quality Coring: None.

Comments:

Primary Pile # 51
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/30/93	2	XL-24	152		5.75		26.43		04/01/93			41	35.5	15.5%

Total Drill Time = 5.75 Hours
Average Penetration Rate = 26.43 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 14.6' S X 3.18' E
S-ARC North = No Overlap at Full Depth, Corrected with Conforming Pile.
S-ARC South = 41.75

Quality Coring: None.

Comments:

Secondary Pile # 52
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/17/93	2	DHD130A	152		13.25		11.47		02/19/93			42	35.5	18.3%

Total Drill Time = 13.25 Hours
Average Penetration Rate = 11.47 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 2.2' N X 5.7' W
S-ARC North = 41.75
S-ARC South = 17.62

Quality Coring: None.

Comments:

Primary Pile # 53
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/23/93	2	DHD130A	153		12.92		11.84		04/24/93			42	35.7	17.6%

Total Drill Time = 12.92 Hours
Average Penetration Rate = 11.84 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 3.25' S X 3.44' W
S-ARC North = 17.62
S-ARC South = 32.35

Quality Coring: None.

Comments:

Secondary Pile # 54
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/23/93	2	DHD130A	152		10.66		14.26		02/23/93			41.5	35.5	16.9%

Total Drill Time = 10.66 Hours
Average Penetration Rate = 14.26 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.31" N X 3.6" E
S-ARC North = 32.35
S-ARC South = 22.27

Quality Coring: None.

Comments:

Primary Pile # 55
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/14/93	2	DHD130A	152		13.42		11.33		04/15/93			41	35.5	15.5%

Total Drill Time = 13.42 Hours
Average Penetration Rate = 11.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 2.31" W
S-ARC North = 22.27
S-ARC South = No Overlap at Full Depth, Connected with Conforming Pile.

Quality Coring: None.

Comments:

Secondary Pile # 56
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/11/93	2	DHD130A	151		11.17		13.52		03/12/93			41	35.3	16.3%

Total Drill Time = 11.17 Hours
Average Penetration Rate = 13.52 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 9.8" S X 7.17" E
S-ARC North = No Overlap at Full Depth, Connected with Conforming Pile.
S-ARC South = 37.84

Quality Coring: None.

Comments:

Primary Pile # 57
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/03/93	2	XL-24	152		4.58		33.19		04/06/93			41	35.5	15.5%

Total Drill Time = 4.58 Hours
Average Penetration Rate = 33.19 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0" N/S X 2.24" E
S-ARC North = 37.84
S-ARC South = 27.63

Quality Coring: None.

Comments:

Secondary Pile # 58
Area "A"

ated A

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/26/93	1	DHD130A	151		11.33		13.33		03/27/93			41.5	35.3	17.7%

Total Drill Time = 11.33 Hours
Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 7.94" S X 4.11" W
S-ARC North = 27.63
S-ARC South = 6.47

Quality Coring: None.

Comments:

Primary Pile # 59
Area "A"

Area 'A'

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/19/93	2	DHD130A		152		21.99		6.91	04/20/93			40	35.5	12.7%

Total Drill Time = 21.99 Hours
Average Penetration Rate = 6.91 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 6.47
S-ARC North = 36.61
S-ARC South =

Quality Coring: None.

Comments:

Secondary Pile # 60
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/01/93	2	DHD130A		152		21.99		6.91				41	35.5	15.5%

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
12/02/92	1	DHD130A	151		18.17		8.31		12/03/92			38	35.3	7.8%

0° N/S X 18.25" E

At Full Depth =	27.09
S--ARC North =	27.75
S--ARC South =	

Primary Pile # 63
Area "A"

Area A

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/22/93	1	DHD130A		150		13.42		11.18	05/24/93			40	35.0	14.2%

Vertically Information	
At Full Depth =	7.55" NX 1.76" E
S-ARC North =	27.75
S-ARC South =	No Overlap at Full

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Spec. Concrete (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Grout (CU.YD.)	Concrete Date	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/01/93	2	XL-24	152		5.83		26.07		42			04/02/93	35.5	18.3%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile # 65
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/07/93	1	DHD130A	153		16.08			9.51	05/10/93			41	35.7	14.8%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment	Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/08/93		2	DHD130A		152		16.75		9.07				41	35.5	15.5%

Verticality Information	3.81" S X 4.13" E
At Full Depth =	20.73
S-ARC North =	31.66
S-ARC South =	

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION			
Drilling Date	Equipment	Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)				
05/18/93		1	DHD130A	150		16.83			8.91		39	35.0	11.3%

Vertically Information

At Full Depth =	0° N/S X 2.11" E
S-ARC North =	31.66
S-ARC South =	31.39

Comments:

CUT - OFF WALL EXCAVATION				CUT - OFF WALL CONSTRUCTION										
Drilling Date	Equipment	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)						
03/05/93	2	DHD130A	150		21.32		7.04		03/06/93			41	35.0	17.0%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments: Deficient Joint Width at Full Depth, Corrected with Conforming Pile.

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Drill (FT / HR)						
04/20/93	2	DHD130A	152		13.40		11.34	04/20/93			40	35.5	12.7%

Total Redrill Time =
Average Penetration Rate =

Quality Coring: None.

Comments:

Secondary Pile # 70
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/09/93	2	DHD130A	150		18.08		8.30		02/10/93			43.5	35.0	24.2%

Total Drill Time = 18.08 Hours
Average Penetration Rate = 8.30 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.92" N X .32" W
S-ARC North = 35.49
S-ARC South = 17.46

Quality Coring: None.

Comments:

Primary Pile # 71
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/13/93	1	DHD130A	150		14.75			10.17	05/14/93			39	35.0	11.3%

Total Drill Time = 14.75 Hours
Average Penetration Rate = 10.17 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.52" S X 3.52" W
S-ARC North = 17.46
S-ARC South = 31.10

Quality Coring: None.

Comments:

Secondary Pile # 72

Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Spec. Concrete (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Grout (CU.YD.)	Concrete Date	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
12/11/92	1	DHD130A		151		21.05		7.17					12/12/92	40.5	35.3	14.9%

Total Drill Time = 21.05 Hours
Average Penetration Rate = 7.17 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0' N/S X .25' W
S-ARC North = 31.10
S-ARC South = 34.02

Quality Coring: None.

Comments:

Primary Pile # 73

Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date					Grout (CU.YD.)
04/05/93	2	XL-24	152		5.72			26.57			40	35.5	12.7%	

Total Drill Time = 5.72 Hours
Average Penetration Rate = 26.57 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 5.72' N X 1.91' W
S-ARC North = 34.02
S-ARC South = 14.11

Quality Coring: 6' Joint 73/74 to 24' on 5/01/93

Comments:

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)				
02/20/93	2	DHD130A	152		23.73		6.41		02/22/93	41.5	35.5	16.9%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile # 75
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/08/93	1	DHD130A	151		12.83		11.77		05/10/93			40	35.3	13.4%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Secondary Pile # 76
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/31/93	2	XL-24	152		7.25		20.97		04/01/93			43	35.5	21.1%

Total Drill Time = 7.25 Hours
Average Penetration Rate = 20.97 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 7.94" N X 5.72" E
S-ARC North = 42.82
S-ARC South = 8.51

Quality Coring: None.

Comments: Deficient Joint Width at Full Depth, Corrected with Conforming Pile.

Primary Pile # 77
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/20/93	1	DHD130A	151		10.42		14.49		05/21/93			38	35.3	7.8%

Total Drill Time = 10.42 Hours
Average Penetration Rate = 14.49 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5" S X 0" EW
S-ARC North = 8.51
S-ARC South = 22.50

Quality Coring: None.

Comments:

Secondary Pile # 78
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/22/93	1	DHD130A	152		15.92		9.55		04/22/93			42.5	35.5	19.7%

Total Drill Time = 15.92 Hours
Average Penetration Rate = 9.55 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.02" S X 4.03" W
S-ARC North = 22.50
S-ARC South = 28.85

Quality Coring: None.

Comments:

Primary Pile # 79
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/16/93	2	DHD130A	150		11.08			13.54		06/16/93			40	35.0	14.2%

Total Drill Time = 11.08 Hours
Average Penetration Rate = 13.54 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.13" S X 0" E/W
S-ARC North = 28.85
S-ARC South = 29.56

Quality Coring: None.

Comments:

Secondary Pile # 80
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/11/93	2	CLUSTER	62		5.92		10.47		03/16/93		19		14.5	31.2%	
04/15/93	1		52	52					04/15/93		12		12.1	-1.2%	
05/28/93	1	DHD130A	150	62	7.83	3.17	11.24	19.56	05/28/93			40	35.0	14.2%	

Total Drill Time = 13.75 Hours
Average Penetration Rate = 10.91 Feet / Hour

Total Redrill Time = 3.17 Hours
Average Penetration Rate = 35.96 Feet / Hour

Verticality Information
At Full Depth = 1" N X 1.76" E
S-ARC North = 29.56
S-ARC South = 33.89

Quality Coring: None.

Comments: Lost cluster bit in hole 4/15/93

Primary Pile # 81
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/04/93	2	DHD130A	150		10.17		14.75		06/04/93			41.5	35.0	18.5%	

Total Drill Time = 10.17 Hours
Average Penetration Rate = 14.75 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 6.54" N X 2" E
S-ARC North = 33.89
S-ARC South = 16.17

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION												
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
11/09/92	1	DHD130A		35		1.68		20.83			11/11/92		6		8.2	-26.6%
11/17/92	1	DHD130A		40	35	2.00	1.55	2.50	22.58		11/18/92		12		9.3	28.5%
12/04/92	1	DHD130A		151	40	11.84	1.83	9.38	21.86		12/08/92			62	35.3	75.8%

Vertically Information

At Full Depth =	.38" N X 0" E/W
S-ARC North =	16.17
S-ARC South =	31.52

Comments: At 32' connected with old Soletanche panel

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/08/93	2	DHD130A	150		11.83		12.68		06/08/93			41.5	35.0	18.5%

Verticality Information	4.03° N X 1.5° E
At Full Depth =	31.52
S-ARC North =	No Overlap at Full Depth
S-ARC South =	

Comments:

Secondary Pile # 84
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/02/93	1	DHD130A	151		12.67			11.92	02/04/93		44		35.3	24.8%
02/05/93	1		38			38			02/06/93		16		8.9	80.3%
06/02/93	1	DHD130A	150	151		151	7.75	19.48	06/02/93			41	35.0	17.0%

Total Drill Time = 12.67 Hours
Average Penetration Rate = 11.84 Feet / Hour

Total Redrill Time = 7.75 Hours
Average Penetration Rate = 24.39 Feet / Hour

Verticality Information
At Full Depth = 6.04" S X 9.31" W
S-ARC North = No Overlap at Full Depth, Corrected with Conforming Pile.
S-ARC South = 32.04

Quality Coring: See pile 83

Comments:

Primary Pile # 85
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/17/93	2	DHD130A	150		11.58			12.95		06/18/93			41	35.0	17.0%

Total Drill Time = 11.58 Hours
Average Penetration Rate = 12.95 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.76" S X 6.04" W
S-ARC North = 32.04
S-ARC South = 28.98

Quality Coring: None.

Comments:

Secondary Pile # 86
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/25/93	1	XL-24	150		7.09		21.16		05/26/93			43.5	35.0	24.2%

Total Drill Time = 7.09 Hours
Average Penetration Rate = 21.16 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0' N/S X 3.52" W
S-ARC North = 28.98
S-ARC South = 20.01

Quality Coring: None.

Comments:

Primary Pile # 87
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/24/93	2	DHD130A	150		11.08		13.54		06/24/93			41	35.0	17.0%

Total Drill Time = 11.08 Hours
Average Penetration Rate = 13.54 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 3.78" S X 1.76" E
S-ARC North = 20.01
S-ARC South = 19.76

Quality Coring: None.

Comments:

Secondary Pile # 88
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/08/93	2	DHD130A	152		10.00		15.20		04/10/93			48	35.5	35.2%

Total Drill Time = 10.00 Hours
Average Penetration Rate = 15.20 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 8.1" S X 4.13" E
S-ARC North = 19.76
S-ARC South = 30.20

Quality Coring: None.

Comments:

Primary Pile # 89
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/22/93	2	DHD130A	150		9.75			15.38		06/23/93			41	35.0	17.0%

Total Drill Time = 9.75 Hours
Average Penetration Rate = 15.38 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5.54" S X 3.52" E
S-ARC North = 30.20
S-ARC South = 27.35

Quality Coring: None.

Comments:

Secondary Pile # 90
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/17/93	2	DHD130A	34		1.25		27.20		02/18/93		10		7.9	26.0%
03/02/93	1	CLUSTER	92	34	12.00	0.50	4.83	68.00	03/02/93		54		21.5	151.4%
06/11/93	2	DHD130A	150	92	6.41	5.33	9.05	17.26	06/12/93			40.5	35.0	15.6%

Total Drill Time = 19.66 Hours
Average Penetration Rate = 7.63 Feet / Hour

Total Redrill Time = 5.83 Hours
Average Penetration Rate = 21.61 Feet / Hour

Verticality Information
At Full Depth = 5.03° S X 5.54° E
S-ARC North = 27.35
S-ARC South = 38.69

Quality Coring: None.

Comments:

Primary Pile # 91
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/25/93	2	DHD130A	150		10.17		14.75		06/25/93			42.5	35.0	21.3%

Total Drill Time = 10.17 Hours
Average Penetration Rate = 14.75 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5.03° N X 2.51° E
S-ARC North = 38.69
S-ARC South = 20.48

Quality Coring: None.

Comments:

Secondary Pile # 92
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/22/93	1	DHD130A	151		11.67		12.94		03/22/93			52	35.3	47.5%

Total Drill Time = 11.67 Hours
Average Penetration Rate = 12.94 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 1.25" N X 1.25" W
S-ARC North = 20.48
S-ARC South = 27.44

Quality Coring: None.

Comments:

Primary Pile # 93
Area "A"

Area A

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/24/93	1	DHD130A	150		9.92			15.12	05/24/93			40.5	35.0	15.6%

Total Drill Time = 9.92 Hours
Average Penetration Rate = 15.12 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 1.75" N X 1.75" W
S-ARC North = 27.44
S-ARC South = No Overlap at Full Depth, Corrected with Conforming Pile.

Quality Coring: None.

Comments:

Secondary Pile # 94
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/06/93	2	DHD130A	152		11.58		13.13		04/06/93			46	35.5	29.6%

Total Drill Time = 11.58 Hours
Average Penetration Rate = 13.13 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 10.5" S X 12.71" E
S-ARC North = No Overlap at Full Depth, Connected with Conforming Pile.
S-ARC South = 39.19

Quality Coring: None.

Comments:

Primary Pile # 95
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete Volume (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/11/93	1	DHD130A	153		11.17		13.70		05/12/93			40	35.7	12.0%

Total Drill Time = 11.17 Hours
Average Penetration Rate = 13.70 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.77" N X 4.03" E
S-ARC North = 39.19
S-ARC South = 23.57

Quality Coring: None.

Comments:

Secondary Pile # 96
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/12/93	2	DHD130A	151		21.98		6.87		02/12/93			54.5	35.3	54.6%

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/08/93	2	DHD-130A	153		18.50		8.27		03/10/93			47	35.7	31.5%

Total Redrill Time =

Average Penetration Rate =

None

Quality Coring: None.

Primary Pile # 99
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Spec. Concrete (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Grout (CU.YD.)	Concrete Date	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
05/14/93	1	DHD130A	150		11.75			12.77		40			05/15/93	35.0	14.2%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Secondary Pile # 100
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/26/93	1	DHD130A	151		10.33		14.62		03/26/93			48	35.3	36.1%

Total Drill Time = 10.33 Hours
Average Penetration Rate = 14.62 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0' N/S X 5.72' W
S-ARC North = 28.11
S-ARC South = 32.72

Quality Coring: None.

Comments:

Primary Pile # 101
Area "A"

Area A

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/27/93	1	DHD130A	150		9.50			15.79	05/27/93			40	35.0	14.2%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 15.79 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 5' N X 1.5' W
S-ARC North = 32.72
S-ARC South = 14.47

Quality Coring: None.

Comments:

Secondary Pile # 102
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
11/09/92	1	DHD130A	60		2.75		21.82			11/09/92		22		14.0	57.0%	
11/17/92	1	DHD130A	62	60	0.08	60	2.40	25.00	25.00	11/17/92		10.5		14.5	-27.5%	
11/23/92	2	DHD130A	146	146	6.62	62	1.85	12.69	33.51		LEFT OPEN					
03/03/93	1	CLUSTER	151	146	0.90	146	3.20	6.25	45.63	03/03/93			SUMF PILE 42	35.3	19.1%	

Total Drill Time = 10.25 Hours
Average Penetration Rate = 14.73 Feet / Hour

Total Redrill Time = 7.45 Hours
Average Penetration Rate = 35.97 Feet / Hour

Verticality Information
At Full Depth = 1.9° S X 0° EW
S-ARC North = 14.47
S-ARC South = 29.35

Quality Coring: None.

Comments:

Primary Pile # 103
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak			
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
06/03/93	2	DHD130A	150		9.83			15.26		06/04/93		41	35.0	17.0%		

Total Drill Time = 9.83 Hours
Average Penetration Rate = 15.26 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° EW
S-ARC North = 29.35
S-ARC South = 21.10

Quality Coring: None.

Comments:

Secondary Pile # 104
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
04/16/93	2	DHD130A	155	15.93			9.73		54.7%
			Total Drill Time = 15.93 Hours		Concrete Date 04/17/93		Spec. Concrete (CU.YD.) 56		Theoretical Volume (CU.YD.) 36.2
			Average Penetration Rate = 9.73 Feet / Hour						
			Total Redrill Time = None						
			Average Penetration Rate =						

Total Drill Time = 15.93 Hours
Average Penetration Rate = 9.73 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 3.65' S X .66' E
S-ARC North = 21.10
S-ARC South = 33.59

Quality Coring: None.

Comments:

Primary Pile # 105
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
05/10/93	1	DHD130A	153	11.33			13.50		12.0%
			Total Drill Time = 11.33 Hours		Concrete Date 05/12/93		Spec. Concrete (CU.YD.) 40		Theoretical Volume (CU.YD.) 35.7
			Average Penetration Rate = 13.50 Feet / Hour						
			Total Redrill Time = None						
			Average Penetration Rate =						

Total Drill Time = 11.33 Hours
Average Penetration Rate = 13.50 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 1.76' N X 1.5' W
S-ARC North = 33.59
S-ARC South = No Overlap at Full Depth, Corrected with Conforming Pile.

Quality Coring: None.

Comments:

Secondary Pile # 106
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/21/93	1	DHD130A	152		14.15		10.74		04/21/93			45	35.5	26.8%

Total Drill Time = 14.15 Hours
Average Penetration Rate = 10.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 9.78" S X 8.15" W
S-ARC North = No Overlap at Full Depth, Connected with Conforming Pile.
S-ARC South = 38.97

Quality Coring: None.

Comments:

Primary Pile # 107
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/20/93	1	DHD 130A	150		12.08		12.42		05/20/93			40	35.0	14.2%

Total Drill Time = 12.08 Hours
Average Penetration Rate = 12.42 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.51" N X 2.27" E
S-ARC North = 38.97
S-ARC South = 26.21

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION												
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
11/11/92	1	DHD130A	37		1.75		21.14			11/11/92			10		8.6	15.7%
11/20/92	1	DHD130A	64		37		9.82	2.08		11/21/92			14		14.9	-6.3%
03/09/93	2	DHD130A	152		64		7.92	7.92		03/10/93					42.5	19.7%

Verticality Information

At Full Depth =	1.3° N X .65° E
S-ARC North =	26.21
S-ARC South =	26.69

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete Volume (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/14/93	1	DHD130A	150		11.58		12.95		05/15/93			40	35.0	14.2%

Verticality Information

At Full Depth =	1.28° N X 5° W
S--ARC North =	26.69
S--ARC South =	16.68

Comments:

Secondary Pile # 110
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/01/93	2	XL-24	152		7.05		21.56		04/02/93			53	35.5	49.3%

Total Drill Time = 7.05 Hours
Average Penetration Rate = 21.56 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.44" S X 8.13" E
S-ARC North = 16.68
S-ARC South = 34.66

Quality Coring: None.

Comments:

Primary Pile # 111
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/01/93	1	DHD130A	150		9.17		16.36		06/01/93			41	35.0	17.0%

Total Drill Time = 9.17 Hours
Average Penetration Rate = 16.36 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3" N X 5" E
S-ARC North = 34.66
S-ARC South = 18.48

Quality Coring: None.

Comments:

Secondary Pile # 112
Area "A"

Area 'A'

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/09/93	2	DHD130A	152		10.72		14.18		04/10/93			46	35.5	29.6%

Total Drill Time = 10.72 Hours
Average Penetration Rate = 14.18 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.91" S X 1.91" E
S-ARC North = 18.48
S-ARC South = 31.01

Quality Coring: None.

Comments:

Primary Pile # 113
Area "A"

CUT-OFF WALL EXCAVATION

CUT-OFF WALL CONSTRUCTION

Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/26/93	1	DHD130A	150		9.42		15.92		05/26/93			40.5	35.0	15.6%

Total Drill Time = 9.42 Hours
Average Penetration Rate = 15.92 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.28" N X 2.31" E
S-ARC North = 31.01
S-ARC South = 24.76

Quality Coring: None.

Comments:

Comments:

Comments:

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)					
02/26/93	1	DHD-130A	154		9.91			15.54		02/26/93	51	36.0	41.8%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile # 117
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)							
05/21/93	1	DHD130A	150		10.67			14.06		05/21/93			41	35.0	17.0%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Secondary Pile # 118
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/13/93	2	DHD130A	151		16.37			9.22			54	35.3	53.1%	

Secondary Pile # 120
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate				Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak			
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
02/23/93	1	DHD130A	40		1.16		34.48			02/23/93		10			9.3	7.1%			
03/03/93	2	DHD130A	78	40	5.08	4.00	7.48	10.00											
03/17/93	1	DHD130A	151	78	6.83	1.83	10.69	42.62		03/17/93	NO	INFORMAT	ION	51	35.3	44.6%			

Total Drill Time = 13.07 Hours
Average Penetration Rate = 11.55 Feet / Hour

Total Redrill Time = 5.83 Hours
Average Penetration Rate = 20.24 Feet / Hour

Verticality Information
At Full Depth = 5.87" N X 0" E/W
S--ARC North = 38.75
S--ARC South = 16.66

Quality Coring: None.

Comments:

Primary Pile # 121
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak				
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
06/07/93	2	DHD130A	150		12.08		12.42			06/08/93			40.5	35.0	15.6%				

Total Drill Time = 12.08 Hours
Average Penetration Rate = 12.42 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 2.75" E
S--ARC North = 16.66
S--ARC South = 33.51

Quality Coring: None.

Comments:

Secondary Pile # 122
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/24/93	1	DHD130A	151		22.10			6.83		03/25/93			50.5	35.3	43.2%

Total Drill Time = 22.10 Hours
Average Penetration Rate = 6.83 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5.41" N X 5.41" E
S-ARC North = 33.51
S-ARC South = 15.31

Quality Coring: None.

Comments: Connection made with pile 144

Primary Pile # 123
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/04/93	2	DHD130A	150		11.08			13.54		06/05/93			40	35.0	14.2%

Total Drill Time = 11.08 Hours
Average Penetration Rate = 13.54 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X 2" E
S-ARC North = 15.31
S-ARC South = 26.41

Quality Coring: None.

Comments:

Secondary Pile # 124
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
11/03/92	1	DHD130A	27		1.35	1.00	20.00								
11/16/92	1	DHD130A	151	27	11.50	1.00	10.78	27.00		11/17/93	SUMP	PILE	44	35.3	24.8%

Total Drill Time = 12.85 Hours
Average Penetration Rate = 11.75 Feet / Hour

Total Redrill Time = 1.00 Hours
Average Penetration Rate = 27.00 Feet / Hour

Verticality Information
At Full Depth = 1" X 1.5" W
S--ARC North = 26.41
S--ARC South = 29.53

Quality Coring: None.

Comments:

Primary Pile # 125
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Pig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/12/93	2	DHD130A	150		10.59		14.16		06/12/93			39.5	35.0	12.8%	

Total Drill Time = 10.59 Hours
Average Penetration Rate = 14.16 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" NX 1" W
S--ARC North = 29.53
S--ARC South = 27.27

Quality Coring: None.

Comments:

Secondary Pile # 126
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Overbreak
05/24/93	1	DHD130A	153		9.59		15.95		31.5%

Total Drill Time = 9.59 Hours
Average Penetration Rate = 15.95 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" N X 3.6" W
S-ARC North = 27.27
S-ARC South = 35.30

Quality Coring: None.

Comments:

Primary Pile # 127
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Overbreak
06/16/93	2	DHD130A	150		10.08		14.88		14.2%

Total Drill Time = 10.08 Hours
Average Penetration Rate = 14.88 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 8.56" N X .5" W
S-ARC North = 35.30
S-ARC South = 17.99

Quality Coring: None.

Comments:

Secondary Pile # 128
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
02/23/93	1	DHD130A	38		1.67		22.75		
04/16/93	2	DHD130A	152	38	9.83	1.10	11.60		34.55
Total Drill Time = 11.50 Hours									
Average Penetration Rate = 13.22 Feet / Hour									
Total Redrill Time = 1.10 Hours									
Average Penetration Rate = 34.55 Feet / Hour									
Verticality Information									
At Full Depth = 3.8" N X 6.36" W									
S-ARC North = 17.99									
S-ARC South = 24.52									
Quality Coring: None.									
Comments:									

Primary Pile # 129
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
06/21/93	2	DHD130A	150		11.50		13.04		
Total Drill Time = 11.50 Hours									
Average Penetration Rate = 13.04 Feet / Hour									
Total Redrill Time = None									
Average Penetration Rate =									
Verticality Information									
At Full Depth = 2.52" N X 2.77" W									
S-ARC North = 24.52									
S-ARC South = 15.83									
Quality Coring: None.									
Comments:									

Secondary Pile # 130
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
02/10/93	2	DHD130A	152		11.24		13.52		28.2%

Total Drill Time = 11.24 Hours
Average Penetration Rate = 13.52 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.65" S X .79" E
S-ARC North = 15.83
S-ARC South = 26.92

Quality Coring: None.

Comments:

Primary Pile # 131
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
06/19/93	2	DHD130A	150		11.50		13.04		14.2%

Total Drill Time = 11.50 Hours
Average Penetration Rate = 13.04 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.01" S X 2.52" E
S-ARC North = 28.92
S-ARC South = 26.02

Quality Coring: None.

Comments:

Secondary Pile # 132
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/14/93	1	DHD130A	153		14.35		10.66		03/15/93			40	35.7	12.0%

Total Drill Time = 14.35 Hours
Average Penetration Rate = 10.66 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.5° S X 3.15° E
S-ARC North = 26.02
S-ARC South = 30.08

Quality Coring: None.

Comments:

Primary Pile # 133
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
05/28/93	1	DHD 130A	153		7.58			20.18		05/29/93			39	35.7	9.2%

Total Drill Time = 7.58 Hours
Average Penetration Rate = 20.18 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 1.5° E
S-ARC North = 30.08
S-ARC South = 26.98

Quality Coring: None.

Comments:

Secondary Pile # 134
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
11/21/92	1	DHD130A	31		1.83		16.94			11/23/94	13	7	38.5	7.2	38.1%
11/23/92	1	DHD130A	62		1.50		41.33			12/07/92				14.5	9.2%
12/03/92	1	DHD130A	151		7.33	3.25	12.14	19.08						35.3	

Total Drill Time = 10.66 Hours
Average Penetration Rate = 17.07 Feet / Hour

Total Redrill Time = 3.25 Hours
Average Penetration Rate = 19.08 Feet / Hour

Verticality Information
At Full Depth = 25° N X .63° W
S-ARC North = 26.98
S-ARC South = 33.87

Quality Coring: None.

Comments:

Primary Pile # 135
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/13/93	2	DHD130A	150		12.33		12.17		05/13/93			40	35.0	14.2%

Total Drill Time = 12.33 Hours
Average Penetration Rate = 12.17 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 6° N X 2.5° E
S-ARC North = 33.87
S-ARC South = Deficient Joint Width at Full Depth, Connected with Conforming Pile.

Quality Coring: None.

Comments:

Secondary Pile # 136
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/25/93	1	DHD130A	151		16.07			9.40	01/28/93		43	35.3	21.9%	

Total Drill Time = 16.07 Hours
Average Penetration Rate = 9.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.2' S X 7.65' W
S-ARC North = Deficient Joint Width at Full Depth, Corrected with Conforming Pile.
S-ARC South = 32.35

Quality Coring: NQ 0' TO 152'. (2/6/93)

Comments: Used pump truck for concrete placement

Primary Pile # 137
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/15/93	2	DHD130A	150		12.33			12.17	06/16/93			40	35.0	14.2%

Total Drill Time = 12.33 Hours
Average Penetration Rate = 12.17 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.89' N X 2' W
S-ARC North = 32.35
S-ARC South = 22.27

Quality Coring: None.

Comments:

Secondary Pile # 138
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Drill Penetration Rate (FT / HR)	Redrill Penetration Rate (FT / HR)	Overbreak
11/13/92	1	DHD130A	151		12.28		12.30		16.3%

Total Drill Time = 12.28 Hours
Average Penetration Rate = 12.30 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 22.27
S-ARC South = 32.66

Quality Coring: None.

Comments: Old Soletanche panel

Primary Pile # 139
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Drill Penetration Rate (FT / HR)	Redrill Penetration Rate (FT / HR)	Overbreak
06/02/93	2	DHD130A	150		11.09		13.53		17.0%

Total Drill Time = 11.09 Hours
Average Penetration Rate = 13.53 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4.53° N X 63° W
S-ARC North = 32.66
S-ARC South = 16.71

Quality Coring: None.

Comments:

Secondary Pile # 140
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
02/08/93	1	DHD130A	32		3.41			9.38		02/09/93				7.5	7.1%	
03/04/93	2	DHD130A	153		14.50			8.34		03/04/93		8	43	35.7	20.4%	

Total Drill Time = 17.91 Hours
Average Penetration Rate = 8.54 Feet / Hour

Total Redrill Time = 1.16 Hours
Average Penetration Rate = 27.59 Feet / Hour

Verticality Information
At Full Depth = 1.3" S X 3.6" W
S-ARC North = 16.71
S-ARC South = 24.13

Quality Coring: Joint 140/14 1; 6" core; 30.3'; 9/22/93

Comments:

Primary Pile # 141
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak			
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
04/05/93	1	DHD130A	153		8.71			17.57		04/06/93		41.5	35.7	16.2%		

Total Drill Time = 8.71 Hours
Average Penetration Rate = 17.57 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.84" S X 0' E/W
S-ARC North = 24.13
S-ARC South = 24.41

Quality Coring: None.

Comments:

Secondary Pile # 142
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/18/93	1	DHD130A	153		14.53			10.53				50	35.7	39.9%

Secondary Pile # 144
Area "A"

Area A

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/27/93	1	XL-24	151		5.50		27.45		03/27/93			48	35.3	36.1%

Total Drill Time = 5.50 Hours
Average Penetration Rate = 27.45 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.25" N X 2.5" E
S-ARC North = 20.62
S-ARC South = 25.65

Quality Coring: None.

Comments: Connected with pile 122

Primary Pile # 145
Area "A"

Area 'A'

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/05/93	2	DHD130A	150		10.92		13.74		06/07/93			42	35.0	19.9%

Total Drill Time = 10.92 Hours
Average Penetration Rate = 13.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5" N X 1.77" E
S-ARC North = 25.65
S-ARC South = 26.00

Quality Coring: None.

Comments:

Secondary Pile # 146
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/17/93	1	DHD130A	153		9.82		15.58		04/19/93			44	35.7	23.2%

Total Drill Time = 9.82 Hours
Average Penetration Rate = 15.58 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X. 70° E
S-ARC North = 26.00
S-ARC South = 30.62

Quality Coring: None.

Comments:

Primary Pile # 147
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/26/93	1	XL-24	150		6.75		22.22		05/26/93			40	35.0	14.2%

Total Drill Time = 6.75 Hours
Average Penetration Rate = 22.22 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3° N X 1.5° W
S-ARC North = 30.62
S-ARC South = 19.72

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/08/93	1	DHD-130A	152		10.16			14.96	04/08/93			46	35.5	29.6%

Total Drill Time = 10.16 Hours
Average Penetration Rate = 14.96 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

At Full Depth =	124" S X 1.86" E
S-ARC North =	19.72
S-ARC South =	34.32

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date (CU.YD.)	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/03/93	2	DHD130A	152		13.08		11.62		05/07/93			40.5	35.5	14.1%

Total Drill Time =	13.08 Hours
Average Penetration Rate =	11.62 Feet / Hour

Total Redrill Time =

Average Penetration Rate =

None

Verticality Information	
At Full Depth =	5.94" N X 4.82" W
S-ARC North =	34.32
S-ARC South =	No Overlap at Full Depth, Corrected with Conforming Pile.

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION								CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/31/93	1	DHD-30A		152		11.20		13.57				43	35.5	21.1%

Total Drill Time =	11.20 Hours
Average Penetration Rate =	13.57 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

Vertically Information

At Full Depth =	7.94" S X 6.04" E
S-APC North =	No Overlap at Full Depth, Connected with Conforming Pile.
S-APC South =	33.74

Quality Coring: None.

Comments:

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/01/93	2	DHD130A		90		5.75		15.65		06/01/93		24	21.0	14.2%

Total Drill Time =
Average Penetration Rate =
5.75 Hours
15.65 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

Verticality Information	1" N X 0" EW
At Full Depth =	33.74
S - APC North =	
S - APC South =	26.74

Quality Coring: None.

Comments:

CUT - OFF WALL EXCAVATION				CUT - OFF WALL CONSTRUCTION										
Drilling Date	Equipment	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/22/93	1	DHD130A	91		10.66		8.54		02/25/93			32	21.3	50.6%

Total Drill Time = 10.66 Hours
Average Penetration Rate = 8.54 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

Verticality Information

At Full Depth =	1.66" N X 5.63" W
S-ARC North =	26.74
S-ARC South =	22.30

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment	Excavation Method	Drill Footage	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/19/93	2	DHD130A	90		8.42		10.69	05/20/93			24	21.0	14.2%

Total Drill Time = 8.42 Hours
Average Penetration Rate = 10.69 Feet / Hour

Total Redrill Time =
Average Penetration Rate =

Verticality Information

At Full Depth =	1" S X 1.77" W
S-ARC North =	22.30
S-ARC South =	33.10

Comments:

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)				
03/15/93	1	DHD130A	91		9.10		10.00			29.5	21.3	38.8%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile # 155
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete Volume (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/23/93	2	DHD130A		90	6.50			13.85		06/23/93			25	21.0	19.0%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Secondary Pile # 156
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/19/93	1	XL-24	93		3.08		30.19		04/20/93			29	21.7	33.5%

Total Drill Time = 3.08 Hours
Average Penetration Rate = 30.19 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X 0" EW
S-ARC North = 23.35
S-ARC South = 27.45

Quality Coring: None.

Comments:

Primary Pile # 157
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/17/93	2	DHD130A	90		6.75		13.33		06/17/93			24	21.0	14.2%

Total Drill Time = 6.75 Hours
Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5" S X .5" E
S-ARC North = 27.45
S-ARC South = 29.53

Quality Coring: None.

Comments:

Secondary Pile # 158
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/08/93	2	DHD130A	90		8.50		10.59		05/10/93			25.5	21.0	21.3%
05/25/93	2	DHD130A		30		2.50	12.00		05/25/93			8	7.0	see comment

Total Drill Time = 8.50 Hours
Average Penetration Rate = 7.06 Feet / Hour

Total Redrill Time = 2.50 Hours
Average Penetration Rate = 12.00 Feet / Hour

Verticality Information
At Full Depth = 1.55" N X .52" W
S-ARC North = 29.53
S-ARC South = 11.33

Quality Coring: None.

Comments: Accidently redrilled 30' on 5/25/93

Primary Pile # 159
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/22/93	2	DHD130A	90		6.08		14.80		06/22/93			24	21.0	14.2%

Total Drill Time = 6.08 Hours
Average Penetration Rate = 14.80 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 6.57" S X 1.26" W
S-ARC North = 11.33
S-ARC South = 25.97

Quality Coring: None.

Comments:

Secondary Pile # 160
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/14/93	1	DHD130A	93		8.75		10.63		04/14/93			26	21.7	19.7%

Total Drill Time = 8.75 Hours
Average Penetration Rate = 10.63 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 6.75" S X 3" E
S-ARC North = 25.97
S-ARC South = 37.08

Quality Coring: None.

Comments:

Primary Pile # 161
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/17/93	1	DHD130A	90		7.63		11.80		05/18/93			25.5	21.0	21.3%

Total Drill Time = 7.63 Hours
Average Penetration Rate = 11.80 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.83" N X 0" E/W
S-ARC North = 37.08
S-ARC South = 14.85

Quality Coring: None.

Comments:

Secondary Pile # 162
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/03/93	1	DHD130A	93		6.91			13.46	04/05/93			29	21.7	33.5%

Total Drill Time = 6.91 Hours
Average Penetration Rate = 13.46 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4.8" S X 3.29" E
S--ARC North = 14.85
S--ARC South = 31.57

Quality Coring: None.

Comments:

Primary Pile # 163
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/12/93	2	DHD130A	90		6.58		13.68		06/12/93			23	21.0	9.4%

Total Drill Time = 6.58 Hours
Average Penetration Rate = 13.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .76" S X .76" W
S--ARC North = 31.57
S--ARC South = 26.18

Quality Coring: None.

Comments:

Secondary Pile # 164
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/29/93	1	DHD130A	93		8.66		10.74		03/30/93			32	21.7	47.3%

Total Drill Time = 8.66 Hours
Average Penetration Rate = 10.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 1.03' S X 1.81' E
S-ARC North = 26.18
S-ARC South = 28.12

Quality Coring: NX/NQ to 82' on 8/14/93.

Comments:

Primary Pile # 165
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/12/93	2	DHD130A	90		6.42			14.02	05/12/93			24	21.0	14.2%

Total Drill Time = 6.42 Hours
Average Penetration Rate = 14.02 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0' N/S X .26' E
S-ARC North = 28.12
S-ARC South = 29.50

Quality Coring: None.

Comments:

Secondary Pile # 166
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/22/93	1	DHD130A	91		15.00		6.07		03/23/93			28	21.3	31.8%

Total Drill Time = 15.00 Hours
Average Penetration Rate = 6.07 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.02" N X 0" E/W
S-ARC North = 29.50
S-ARC South = 24.56

Quality Coring: None.

Comments:

Primary Pile # 167
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/27/93	2	DHD130A	90		5.83		15.44		05/27/93			24	21.0	14.2%

Total Drill Time = 5.83 Hours
Average Penetration Rate = 15.44 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .51" N X 0" E/W
S-ARC North = 24.56
S-ARC South = 27.43

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION																	
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		CUT-OFF WALL CONSTRUCTION								
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak			
03/18/93	1	DHD130A		92		7.24		12.71				03/18/93			26.5	21.5	23.3%

Comments:

CUT - OFF WALL EXCAVATION				CUT - OFF WALL CONSTRUCTION											
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Spec. Concrete (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Grout (CU.YD.)	Concrete Date	Theoretical Volume (CU.YD.)	Overbreak	
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/07/93	2	DHD130A	90		6.00			15.00				06/06/93	24	21.0	14.2%

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rtg #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/12/93	1	DHD130A	92		10.63			8.65		03/13/93			27	21.5	25.7%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile # 171
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/06/93	2	DHD130A	90		5.00		18.00		05/06/93	24	21.0	14.2%		

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/24/93	1	DHD130A	92		9.16		10.04		02/26/93			30	21.5	39.6%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/22/93	2	DHD130A	90		5.50			16.36	05/22/93			24.5	21.0	16.6%

Total Redrill Time =
Average Penetration Rate =

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rtg #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/01/93	2	DHD130A	91		5.50		16.55		02/02/93			33	21.3	55.3%

Total Redrill Time =
Average Penetration Rate =
None

Vertically Information

At Full Depth =	.75" N X 1" W
S-ARC North =	24.57
S-ARC South =	25.69

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)						
06/03/93	1	DHD130A	90		7.75		11.61		06/03/93			24	21.0	14.2%

Total Redrill Time =
Average Penetration Rate =
None

0° N/S X.25° W

At Full Depth =	23.69
S-ARC North =	27.47
S-ARC South =	

Comments:

Secondary Pile # 176
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/16/93	1	DHD130A	93		10.40		8.94		03/16/93		30	21.7	38.1%	

Total Drill Time = 10.40 Hours
Average Penetration Rate = 8.94 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5" N X .5" W
S-ARC North = 27.47
S-ARC South = 26.03

Quality Coring: None.

Comments:

Primary Pile # 177
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/14/93	2	DHD130A	90		5.00		18.00		06/14/93		24	21.0	14.2%	

Total Drill Time = 5.00 Hours
Average Penetration Rate = 18.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 0" E/W
S-ARC North = 26.03
S-ARC South = 21.88

Quality Coring: None.

Comments:

Secondary Pile # 178
Area "A"

Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/25/93	1	DHD130A	92		7.66		12.01		03/26/93		32		21.5	49.0%
04/21/93	1	DHD130A	93		0.10	2.58	10.00	35.66	04/21/93			27	21.7	24.3%

Total Drill Time = 7.76 Hours
Average Penetration Rate = 11.98 Feet / Hour

Total Redrill Time = 2.58 Hours
Average Penetration Rate = 35.66 Feet / Hour

Verticality Information
At Full Depth = 3" S X 3" W
S-ARC North = 21.88
S-ARC South = 34.94

Quality Coring: None.

Comments:

Primary Pile # 179
Area "A"

CUT-OFF WALL EXCAVATION														CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak				
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)										
05/13/93	2	DHD130A	90		7.34		12.26		05/13/93			24	21.0	14.2%				

Total Drill Time = 7.34 Hours
Average Penetration Rate = 12.26 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.66" N X 0" E/W
S-ARC North = 34.94
S-ARC South = 25.05

Quality Coring: None.

Comments:

Secondary Pile # 180
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/04/93	2	DHD130A	92		6.75		13.63		05/04/93			27.5	21.5	28.0%

Total Drill Time = 6.75 Hours
Average Penetration Rate = 13.63 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.5" N X 1" W
S-ARC North = 25.05
S-ARC South = 26.89

Quality Coring: None.

Comments:

Primary Pile # 181
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/28/93	2	DHD130A	90		5.83		15.44		05/29/93			24.5	21.0	16.6%

Total Drill Time = 5.83 Hours
Average Penetration Rate = 15.44 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.78" N X 2" E
S-ARC North = 26.89
S-ARC South = 18.5

Quality Coring: None.

Comments:

Secondary Pile # 182
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/14/93	1	DHD130A	93		6.16		15.10		04/15/93			28	21.7	28.9%

Total Drill Time = 6.16 Hours
Average Penetration Rate = 15.10 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.28° S X 3.29° E
S-ARC North = 18.5
S-ARC South = 30.29

Quality Coring: None.

Comments:

Primary Pile # 183
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/19/93	2	DHD130A	90		7.33		12.28		05/19/93			24	21.0	14.2%

Total Drill Time = 7.33 Hours
Average Penetration Rate = 12.28 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5° N X .5° E
S-ARC North = 30.29
S-ARC South = 23.77

Quality Coring: None.

Comments:

Secondary Pile # 186
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/22/93	1	DHD130A	93		7.50			12.40	02/23/93			26	21.7	19.7%

Total Drill Time = 7.50 Hours
Average Penetration Rate = 12.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3° S X 9° W
S-ARC North = 17.97
S-ARC South = 29.77

Quality Coring: None.

Comments:

Primary Pile # 187
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/07/93	2	DHD130A	90		7.00		12.86		05/07/93			23	21.0	9.4%

Total Drill Time = 7.00 Hours
Average Penetration Rate = 12.86 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5° N X 1.5° W
S-ARC North = 29.77
S-ARC South = 26.56

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION		CUT-OFF WALL CONSTRUCTION													
Drilling Date	Equipment	Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/12/93		2	Test	13											
01/18/93		1	DHD130A	92		15.80		5.82		01/21/93			28	21.5	30.3%

Total Drill Time = 15.80 Hours
Average Penetration Rate = 6.65 Feet / Hour

Total Bedrill Time = None

Verticality Information

At Full Depth =	.38" N X 1.75" W
S-ARC North =	26.56
S-ARC South =	26.04

Quality Coring: NQ FROM 0' TO 89.8'. MOVED 8" NORTH OF CENTER OF PILE #188 TOOK 6" CORE FROM 0' TO 14.9'

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Grout (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)					
06/01/93	2	DHD130A	90		6.50		13.85			06/02/93	24	21.0	14.2%

Total Drill Time = **6.50 Hours**
Average Penetration Rate = **13.85 Feet / Hour**

Total Redrill Time = None

Verticality Information

At Full Depth =	0° N/S X .76° E
S-ARC North =	26.04
S-ARC South =	32.3

Quality Coring: None.

Comments:

Secondary Pile # 190
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/17/93	1	DHD130A	90		8.57			10.50	03/18/93			26.5	21.0	26.1%

Total Drill Time = 8.57 Hours
Average Penetration Rate = 10.50 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4.6" N X 3.07" W
S-ARC North = 32.30
S-ARC South = 18.26

Quality Coring: None.

Comments: Grout side stabilization test from pile 190 to pile 246

Primary Pile # 191
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/15/93	2	DHD130A	90		8.84			10.19	05/15/93			23	21.0	9.4%

Total Drill Time = 8.84 Hours
Average Penetration Rate = 10.19 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5" S X .5" W
S-ARC North = 18.26
S-ARC South = 30.75

Quality Coring: None.

Comments:

Secondary Pile # 192
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/29/93	1	DHD130A	92		6.00		15.33		03/29/93			27.5	21.5	28.0%

Total Drill Time = 6.00 Hours
Average Penetration Rate = 15.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.56" N X 2.3" W
S-ARC North = 30.75
S-ARC South = 22.06

Quality Coring: None.

Comments:

Primary Pile # 193
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
05/27/93	2	DHD130A	90		7.67			11.73		05/27/93			24	21.0	14.2%

Total Drill Time = 7.67 Hours
Average Penetration Rate = 11.73 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5" S X 1.26" W
S-ARC North = 22.06
S-ARC South = 24.52

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate			Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)				
04/07/93	1	DHD130A	93		6.80			13.68			04/07/93	25	21.7	15.1%

Total Redrill Time = None

Veracity Information

At Full Depth =	1.76° S X 2.53° E
S-ARC North =	24.52
S-ARC South =	30.73

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
05/11/93	2	DHD130A	90		7.00			12.86		05/12/93			25	21.0	19.0%

Total Redrill Time =
Average Penetration Rate =
None

Verticality Information

At Full Depth =	1.25" N X 1.25" E
S-ARC North =	30.73
S-ARC South =	24.79

Comments:

Secondary Pile # 196
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/07/93	1	DHD130A	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/16/93	1	DHD130A	54	93	3.33	4.25	16.22	9.18	04/17/93			27	21.7	24.3%

Total Drill Time = 7.58 Hours
Average Penetration Rate = 12.27 Feet / Hour

Total Redrill Time = 3.00 Hours
Average Penetration Rate = 18.00 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 1.06° W
S-ARC North = 24.79
S-ARC South = 26.49

Quality Coring: None.

Comments:

Primary Pile # 197
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/12/93	2	DHD130A	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
			90		5.50		16.36		06/12/93			23	21.0	9.4%

Total Drill Time = 5.50 Hours
Average Penetration Rate = 16.36 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 2° E
S-ARC North = 26.49
S-ARC South = 26.33

Quality Coring: None.

Comments:

Secondary Pile # 198
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/21/93	1	DHD130A	93		9.58		9.71		04/22/93			39	21.7	79.6%

Total Drill Time = 9.58 Hours
Average Penetration Rate = 9.71 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 1.85° W
S-ARC North = 26.33
S-ARC South = 26.66

Quality Coring: None.

Comments:

Primary Pile # 199
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/02/93	2	DHD130A	90		5.84			15.41	06/02/93			24.5	21.0	16.6%

Total Drill Time = 5.84 Hours
Average Penetration Rate = 15.41 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 26.66
S-ARC South = 24.51

Quality Coring: None.

Comments:

Secondary Pile # 200
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION											
Equipment		Excavation		Drill Footage		Pure Drill Time		Penetration Rate		Concrete		Grout		Non-Spec. Concrete		Spec. Concrete		Theoretical Volume		Overbreak	
Drilling Date	Rig #	Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak							
01/25/93	2	DHD30	91		11.91		7.64		01/30/93	26			21.3	22.4%							
02/02/93	2	DHD30	91	91		2.00	45.50		02/02/94	4			21.3	-81.2%							
05/17/93	2	DHD30	55	91		1.67	54.49		05/18/93	16			12.8	24.6%							
05/25/93	2	DHD30	90	91		5.58	16.31		05/25/93			25.5	21.0	21.3%							

Total Drill Time = 11.91 Hours
Average Penetration Rate = 4.53 Feet / Hour

Total Redrill Time = 9.25 Hours
Average Penetration Rate = 29.51 Feet / Hour

Verticality Information
At Full Depth = 1.5" S X 1" W
S-ARC North = 24.51
S-ARC South = 31.15

Quality Coring: 6" Joint core 200/201; 31'deep; on 9/23/93

Comments:

Primary Pile # 201
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION											
Equipment		Excavation Method		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date		Grout (CU.YD.)		Non-Spec. Concrete (CU.YD.)		Spec. Concrete (CU.YD.)		Theoretical Volume (CU.YD.)		Overbreak	
Drilling Date	Rig #			Drill (FT)		Redrill (FT)	Drill (HRS)		Redrill (HRS)	Drill (FT / HR)		Redrill (FT / HR)									
06/24/93	2	DHD30		90			6.58			13.68			06/24/93				24		21.0		14.2%

Total Drill Time = 6.58 Hours
Average Penetration Rate = 13.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.78" N X 1" W
S-ARC North = 31.15
S-ARC South = 23.34

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Flag #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
05/05/93	2	DHD30	90		7.42		12.13			28	21.0	33.2%

Total Drill Time = 7.42 Hours
Average Penetration Rate = 12.13 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

At Full Depth =	.5" S X 0" E/W
S-ARC North =	23.34
S-ARC South =	28.83

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/22/93	2	DHD30	90		5.17		17.41		05/22/93			25	21.0	19.0%

Total Drill Time = 5.17 Hours
Average Penetration Rate = 17.41 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

1" N X 0" EW	
At Full Depth =	28.83
S - APC North =	30.24
S - APC South =	

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/19/93	1	XL-24	93		2.92		31.85			04/19/93			27	21.7	24.3%

Verticality Information

At Full Depth =	4.55° N X 6.32° W
S-ARC North =	30.24
S-ARC South =	22.58

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/23/93	2	DHD30		90		7.00		12.86	06/23/93			25	21.0	19.0%

Verticality Information

At Full Depth =	2.53" N X 0" EW
S-ARC North =	22.58
S-ARC South =	20.42

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/10/93	1	DHD30		93	5.40		17.22		04/12/93			30	21.7	38.1%

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (FT)	Drill (FT / HR)	Redrill (HRS)						
06/25/93	2	DHD30	90	6.75		13.33		06/26/93			24	21.0	14.2%

Comments:

Secondary Pile # 208
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
05/10/93	2	DHD30	92		8.25		11.15		25.7%

Total Drill Time = 8.25 Hours
Average Penetration Rate = 11.15 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 1.31" N X .78" W
S-ARC North = 21.61
S-ARC South = 26.95

Quality Coring: None.

Comments:

Primary Pile # 209
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
06/03/93	1	DHD30	90		6.17		14.59		14.2%

Total Drill Time = 6.17 Hours
Average Penetration Rate = 14.59 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 1.5" N X 1" E
S-ARC North = 26.95
S-ARC South = 24.53

Quality Coring: None.

Comments:

Secondary Pile # 210
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Theoretical Volume (CU.YD.)
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
05/13/93	2	DHD130A	90		8.58		10.49		21.0
									28.5%

Total Drill Time = 8.58 Hours
Average Penetration Rate = 10.49 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 24.53
S-ARC South = 27.47

Quality Coring: None.

Comments:

Primary Pile # 211
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Theoretical Volume (CU.YD.)
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
06/26/93	2	DHD130A	90		5.75		15.65		21.0
									14.2%

Total Drill Time = 5.75 Hours
Average Penetration Rate = 15.65 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5° N X 0° E/W
S-ARC North = 27.47
S-ARC South = 21.70

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)						
04/20/93	1	XL-24	93		3.17		29.34				28	21.7	28.9%

Total Drill Time = 3.17 Hours
Average Penetration Rate = 29.34 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

At Full Depth =	2.78°S X 1° E
S-ARC North =	21.70
S-ARC South =	21.74

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HB)	Redrill (FT / HR)	Concrete Data	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/28/93	2	DHD130A	90		5.00		18.00		05/28/93			24	21.0	14.2%

Total Drill Time =
Average Penetration Rate =

Total Redrill Time =
Average Penetration Rate =
None

At Full Depth =	1" NX 1.5" E
S-APC North =	21.74
S-APC South =	29.75

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rlg #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/30/93	1	DHD130A	93		7.05		13.19		03/31/93			28	21.7	28.9%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile # 215
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/28/93	2	DHD130A	90		6.88		13.08		06/28/93			24	21.0	14.2%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Secondary Pile # 216
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/20/93	2	DHD130A	90		7.42		12.13		05/20/93			25.5	21.0	21.3%

Total Drill Time = 7.42 Hours
Average Penetration Rate = 12.13 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5° S X 0° E/W
S-ARC North = 21.73
S-ARC South = 27.45

Quality Coring: None.

Comments:

Primary Pile # 217
Area "A"

CUT-OFF WALL EXCAVATION							CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/26/93	2	DHD130A	90		7.58			11.87	05/26/93			25.5	21.0	21.3%

Total Drill Time = 7.58 Hours
Average Penetration Rate = 11.87 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 1° W
S-ARC North = 27.45
S-ARC South = 29.48

Quality Coring: None.

Comments:

Secondary Pile # 218
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/02/93	2	DHD130A	38		1.66		22.89		02/02/93		9	26	8.9	1.4%
04/06/93	1	DHD130A	91	38	4.82	2.25	11.00	16.89	04/07/93				21.3	22.4%

Total Drill Time = 6.48 Hours
Average Penetration Rate = 14.04 Feet / Hour
Total Redrill Time = 2.25 Hours
Average Penetration Rate = 16.89 Feet / Hour

Verticality Information
At Full Depth = 2' N X 0' E/W
S-ARC North = 29.48
S-ARC South = 25.96

Quality Coring: None.

Comments:

Primary Pile # 219
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/22/93	1	DHD130A	93		5.50		16.91		04/22/93			26	21.7	19.7%

Total Drill Time = 5.50 Hours
Average Penetration Rate = 16.91 Feet / Hour
Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.85' N X 4.37' W
S-ARC North = 25.96
S-ARC South = 26.50

Quality Coring: None.

Comments:

Secondary Pile # 220
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/30/93	2	DHD130A	90		6.58		13.68		07/01/93			24	21.0	14.2%

Total Drill Time = 6.58 Hours
Average Penetration Rate = 13.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2' N X .25" W
S-ARC North = 26.50
S-ARC South = 23.76

Quality Coring: None.

Comments:

Primary Pile # 221
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/06/93	2	DHD130A	90		6.16		14.61		05/07/93			25	21.0	19.0%

Total Drill Time = 6.16 Hours
Average Penetration Rate = 14.61 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0' N/S X .5" E
S-ARC North = 23.76
S-ARC South = 21.72

Quality Coring: None.

Comments:

Secondary Pile # 222
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/16/93	1	DHD130A	93		6.34		14.67		04/16/93			26	21.7	19.7%

Total Drill Time = 6.34 Hours
Average Penetration Rate = 14.67 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.29° S X 1° E
S-ARC North = 21.72
S-ARC South = 32.70

Quality Coring: None.

Comments:

Primary Pile # 223
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/19/93	2	DHD130A	90		8.67		10.38		05/19/93			25	21.0	19.0%

Total Drill Time = 8.67 Hours
Average Penetration Rate = 10.38 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.25° N X .76° E
S-ARC North = 32.70
S-ARC South = 26.35

Quality Coring: None.

Comments:

Secondary Pile # 224
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
04/02/93	1	DHD130A	92		6.80		13.53		04/02/93			26.5	21.5	23.3%					

Secondary Pile # 226
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Drill Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
04/09/93	1	DHD130A	92		6.30		14.60		21.0%

Total Drill Time = 6.30 Hours
Average Penetration Rate = 14.60 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.28° S X 3.79° W
S-ARC North = 21.09
S-ARC South = 31.68

Quality Coring: None.

Comments: 6" Joint core 226/227; 30.3' deep on 8/19/93

Primary Pile # 227
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Drill Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
06/29/93	2	DHD130A	90		8.75		10.29		14.2%

Total Drill Time = 8.75 Hours
Average Penetration Rate = 10.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2° N X 1° E
S-ARC North = 31.68
S-ARC South = 23.75

Quality Coring: None.

Comments:

Secondary Pile # 228
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HRS)	Redrill (FT / HRS)						
05/15/93	2	DHD130A	90		8.75		10.29		05/15/93			26	21.0	23.7%

Total Drill Time = 8.75 Hours
Average Penetration Rate = 10.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 23.75
S-ARC South = 24.63

Quality Coring: None.

Comments:

Primary Pile # 229
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/02/93	1	DHD130A	90		5.33		16.89		06/02/93			24	21.0	14.2%

Total Drill Time = 5.33 Hours
Average Penetration Rate = 16.89 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.4° S X 1.7° W
S-ARC North = 24.63
S-ARC South = 30.56

Quality Coring: None.

Comments:

Secondary Pile # 230
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak				
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
01/26/93	2	DHD130A	91		11.66		7.80			01/30/93		27		21.3	27.1%				
05/27/93	2	DHD130A		90		3.58		25.14		05/28/93			27	21.0	28.5%				

Total Drill Time = 11.66 Hours
Average Penetration Rate = 0.09 Feet / Hour

Total Redrill Time = 3.58 Hours
Average Penetration Rate = 25.14 Feet / Hour

Verticality Information
At Full Depth = 1.5" S X 0" E/W
S-ARC North = 30.56
S-ARC South = 24.56

Quality Coring: None.

Comments: Hole collapsed on 1/30/93

Primary Pile # 231
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
06/14/93	2	DHD130A	90		6.00		15.00		06/14/93			24	21.0	14.2%		

Total Drill Time = 6.00 Hours
Average Penetration Rate = 15.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 0" E/W
S-ARC North = 24.56
S-ARC South = 24.46

Quality Coring: None.

Comments:

Secondary Pile # 232
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
05/25/93	2	DHD130A	90		8.75		10.29		05/25/93			25.5	21.0	21.3%	

Total Drill Time = 8.75 Hours
Average Penetration Rate = 10.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.57" S X 5" W
S-ARC North = 24.46
S-ARC South = 28.90

Quality Coring: None.

Comments:

Primary Pile # 233
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete Volume (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak			
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/24/93	2	DHD130A	90		6.25		14.40		06/25/93		23	21.0	9.4%		

Total Drill Time = 6.25 Hours
Average Penetration Rate = 14.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S/ X 0" E/W
S-ARC North = 28.90
S-ARC South = 28.14

Quality Coring: None.

Comments:

Secondary Pile # 234
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/21/93	2	DHD130A	90		8.67		10.38		05/22/93			26.5	21.0	26.1%

Total Drill Time = 8.67 Hours
Average Penetration Rate = 10.38 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" N X .75" W
S-ARC North = 28.14
S-ARC South = 25.29

Quality Coring: None.

Comments:

Primary Pile # 235
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/04/93	1	DHD130A	90		6.50		13.85		06/05/93			24	21.0	14.2%

Total Drill Time = 6.50 Hours
Average Penetration Rate = 13.85 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 0" E/W
S-ARC North = 25.29
S-ARC South = 26.72

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
05/18/93	2	DHD130A	90		7.75		11.61			05/18/93			27	21.0	28.5%

At Full Depth =	0° N/S X 1.26° E
S-ARC North =	26.72
S-ARC South =	30.34

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/26/93	2	DHD130A	90		7.25		12.41		05/26/93			24	21.0	14.2%

Vertically Information

Comments:

Secondary Pile # 238
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
04/17/93	1	DHD130A	93		6.58		14.13		47.3%

Total Drill Time = 6.58 Hours
Average Penetration Rate = 14.13 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.28" N X 2.28" W
S-ARC North = 26.00
S-ARC South = 20.48

Quality Coring: None.

Comments:

Primary Pile # 239
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
05/10/93	2	DHD130A	92		8.17		11.26		11.7%

Total Drill Time = 8.17 Hours
Average Penetration Rate = 11.26 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.57" S X .78" E
S-ARC North = 20.48
S-ARC South = 28.21

Quality Coring: None.

Comments:

Secondary Pile # 240
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
02/02/93	2	DHD130A	46		3.50		13.14		11.7%
04/06/93	1	DHD130A	92	46	4.33	1.60	10.62	28.75	39.6%

Total Drill Time = 7.83 Hours
Average Penetration Rate = 11.75 Feet / Hour

Total Redrill Time = 1.60 Hours
Average Penetration Rate = 28.75 Feet / Hour

Verticality Information
At Full Depth = .5' S X 1.05' E
S-ARC North = 28.21
S-ARC South = 29.88

Quality Coring: None.

Comments:

Primary Pile # 241
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
05/14/93	2	DHD130A	90		7.00		12.86		14.2%

Total Drill Time = 7.00 Hours
Average Penetration Rate = 12.86 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.88" N X .94" W
S-ARC North = 29.88
S-ARC South = 23.21

Quality Coring: None.

Comments:

Secondary Pile # 242
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/20/93	2	XL-24	93		4.34			21.43	04/20/93			33.5	21.7	54.3%

Total Drill Time = 4.34 Hours
Average Penetration Rate = 21.43 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 4.04" W
S-ARC North = 23.21
S-ARC South = 25.20

Quality Coring: None.

Comments:

Primary Pile # 243
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/28/93	2	DHD130A	90		3.58			25.14		05/28/93		24	21.0	14.2%

Total Drill Time = 3.58 Hours
Average Penetration Rate = 25.14 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X 2" W
S-ARC North = 25.20
S-ARC South = 28.60

Quality Coring: None.

Comments:

Secondary Pile # 244
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/05/93	2	DHD130A	92		7.67		11.99		05/05/93			30	21.5	39.6%

Total Drill Time = 7.67 Hours
Average Penetration Rate = 11.99 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5" N X .76" E
S-ARC North = 28.60
S-ARC South = 30.01

Quality Coring: None.

Comments:

Primary Pile # 245
Area "A"

CUT-OFF WALL EXCAVATION														CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak				
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)										
05/20/93	2	DHD130A	90		8.34		10.79		05/21/93			25	21.0	19.0%				

Total Drill Time = 8.34 Hours
Average Penetration Rate = 10.79 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.14" N X 2.35" W
S-ARC North = 30.01
S-ARC South = 21.40

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/16/93	1	DHD130A	93		5.91		15.74		04/16/93			29	21.7	33.5%

Total Bedrill Time = None

Quality Coring: None.

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/26/93	2	DHD130A	90		6.42		14.02		06/28/93			24	21.0	14.2%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Secondary Pile # 248
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
02/05/93	2	DHD130A	91		8.80		10.34			02/10/93		16		21.3	-24.7%
04/08/93	2	DHD130A	93	91	0.17	3.50	11.76	26.00		04/09/93			28	21.7	28.9%

Total Drill Time = 8.97 Hours
Average Penetration Rate = 10.37 Feet / Hour

Total Redrill Time = 3.50 Hours
Average Penetration Rate = 26.00 Feet / Hour

Verticality Information
At Full Depth = 3" S X 1.77" E
S-ARC North = 22.99
S-ARC South = 31.10

Quality Coring: None.

Comments:

Primary Pile # 249
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/02/93	1	DHD130A	90		7.42			12.13		06/02/93			24	21.0	14.2%

Total Drill Time = 7.42 Hours
Average Penetration Rate = 12.13 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .25" N X .76" E
S-ARC North = 31.10
S-ARC South = 19.13

Quality Coring: None.

Comments:

Secondary Pile # 250
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
01/20/93	2	DHD130A	92		12.91			7.13		01/23/93			29	21.5	35.0%

Total Drill Time = 12.91 Hours
Average Penetration Rate = 7.13 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4.5" S X 0" EW
S-ARC North = 19.13
S-ARC South = 29.11

Quality Coring: NX/NQ cored to 97' on 7/15/93

Comments:

Primary Pile # 251
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume - (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
01/15/93	1	DHD130A	90		5.92			15.20		06/15/93			24	21.0	14.2%

Total Drill Time = 5.92 Hours
Average Penetration Rate = 15.20 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.78" S X 0" EW
S-ARC North = 29.11
S-ARC South = 26.24

Quality Coring: None.

Comments:

Secondary Pile # 252
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Penetration Rate (FT / HR)	Concrete Date
01/25/93	2	DHD130A	92		8.07	11.40			01/27/93
04/22/93	1	DHD130A	93	0	0.05	1860.00	0.00		04/23/94
Total Drill Time = 8.12 Hours									
Average Penetration Rate = 22.78 Feet / Hour									
Total Redrill Time = 5.50									
Average Penetration Rate =									
Verticality Information									
At Full Depth = 3.12' S X 1.12' W									
S-ARC North = 26.24									
S-ARC South = 30.79									
Quality Coring: This pile was cored on 1/25/93 but was not payed for because the pile was accidentally drilled again after coring was completed.									
Comments: Pile was accidentally redrilled by contractor on 4/22/93									

Total Drill Time = 8.12 Hours
Average Penetration Rate = 22.78 Feet / Hour
Total Redrill Time = 5.50
Average Penetration Rate =

Verticality Information
At Full Depth = 3.12' S X 1.12' W
S-ARC North = 26.24
S-ARC South = 30.79

Quality Coring: This pile was cored on 1/25/93 but was not payed for because the pile was accidentally drilled again after coring was completed.

Comments: Pile was accidentally redrilled by contractor on 4/22/93

Primary Pile # 253
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Penetration Rate (FT / HR)	Concrete Date
05/06/93	2	DHD130A	90		5.83	15.44			05/06/93
Total Drill Time = 5.83 Hours									
Average Penetration Rate = 15.44 Feet / Hour									
Total Redrill Time = None									
Average Penetration Rate =									
Verticality Information									
At Full Depth = 0' N/S X 1" E									
S-ARC North = 30.79									
S-ARC South = 28.82									
Quality Coring: None.									
Comments:									

Total Drill Time = 5.83 Hours
Average Penetration Rate = 15.44 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0' N/S X 1" E
S-ARC North = 30.79
S-ARC South = 28.82

Quality Coring: None.

Comments:

Secondary Pile # 254
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
04/01/93	1	DHD130A	92	6.91			13.31		
					Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)
					04/02/93			26.5	21.5
					Overbreak				
					23.3%				

Total Drill Time = 6.91 Hours
Average Penetration Rate = 13.31 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" N X 0" E/W
S-ARC North = 28.82
S-ARC South = 27.44

Quality Coring: None.

Comments:

Primary Pile # 255
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
06/28/93	2	DHD130A	90	4.92			18.29		
					Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)
					06/29/93			24	21.0
					Overbreak				
					14.2%				

Total Drill Time = 4.92 Hours
Average Penetration Rate = 18.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2" N X .75" E
S-ARC North = 27.44
S-ARC South = 25.29

Quality Coring: None.

Comments:

Secondary Pile # 256
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/03/93	1	DHD130A	91		6.42		14.17		06/04/93			27	21.3	27.1%	

Total Drill Time = 6.42 Hours
Average Penetration Rate = 14.17 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 1" N X 0" E/W
S-ARC North = 25.29
S-ARC South = 29.41

Quality Coring: None.

Comments:

Primary Pile # 257
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
07/01/93	2	DHD130A	90		4.92		18.29		07/02/93			24	21.0	14.2%	

Total Drill Time = 4.92 Hours
Average Penetration Rate = 18.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 3" N X 1.78" E
S-ARC North = 29.41
S-ARC South = 23.90

Quality Coring: None.

Comments:

Secondary Pile # 258
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)						
06/10/93	1	DHD130A	90		5.75		15.65		06/11/93			31.5	21.0	49.9%

Secondary Pile # 260
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
06/12/93	1	DHD130A	90		7.25		12.41		06/14/93

Total Drill Time = 7.25 Hours
Average Penetration Rate = 12.41 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X 1.26" E
S-ARC North = 18.04
S-ARC South = 31.65

Quality Coring: None.

Comments:

Primary Pile # 261
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
06/26/93	2	DHD130A	90		6.34		14.20		06/28/93

Total Drill Time = 6.34 Hours
Average Penetration Rate = 14.20 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3" N X 2.25" W
S-ARC North = 31.65
S-ARC South = 22.19

Quality Coring: None.

Comments:

Secondary Pile # 262
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
06/05/93	1	DHD130A	90		7.75		11.61		52.3%

Total Drill Time = 7.75 Hours
Average Penetration Rate = 11.61 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 1.52° W
S-ARC North = 22.19
S-ARC South = 30.37

Quality Coring: None.

Comments:

Primary Pile # 263
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
06/18/93	1	DHD130A	90		4.50		20.00		14.2%

Total Drill Time = 4.50 Hours
Average Penetration Rate = 20.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.78° N X .51° E
S-ARC North = 30.37
S-ARC South = 22.56

Quality Coring: None.

Comments:

Secondary Pile # 264
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
02/03/93	2	DHD130A	75		6.58		11.40		02/03/93		21		17.5	19.9%					
04/20/93	1	DHD130A	93	75	1.42	0.75	12.68	100.00	04/21/93			26.5	21.7	22.0%					

Total Drill Time = 8.00 Hours
Average Penetration Rate = 11.63 Feet / Hour

Total Redrill Time = 0.75 Hours
Average Penetration Rate = 100.00 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 22.56
S-ARC South = 28.34

Quality Coring: 6" Joint core 264/265; 30.9' deep on 9/24/93

Comments:

Primary Pile # 265
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
05/26/93	2	DHD130A	90		6.92		13.01		05/27/93			24	21.0	14.2%					

Total Drill Time = 6.92 Hours
Average Penetration Rate = 13.01 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.14° N X 0° E/W
S-ARC North = 28.34
S-ARC South = 23.17

Quality Coring: None.

Comments:

Secondary Pile # 266
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/29/93	2	DHD130A	90.5		6.16		14.69		01/30/93		32	21.1	51.4%	

Total Drill Time = 6.16 Hours
Average Penetration Rate = 14.69 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.25" S X 1" W
S-ARC North = 23.17
S-ARC South = 30.84

Quality Coring: None.

Comments:

Primary Pile # 267
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/18/93	2	DHD130A	90		8.50		10.59		05/18/93		24	21.0	14.2%	

Total Drill Time = 8.50 Hours
Average Penetration Rate = 10.59 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.83" N X 2.09" W
S-ARC North = 30.84
S-ARC South = 23.94

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/06/93	2	DHD130A	93		6.00		15.50			29.5	21.7	35.8%		

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/11/93	2	DHD130A	90		6.92		13.01		05/11/93			24	21.0	14.2%

Comments:

Secondary Pile # 270
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/04/93	2	DHD130A	44		2.33		18.88		02/05/93		13		10.3	26.5%
04/15/93	1	DHD130A	93	44	4.91	2.00	9.98	22.00	04/16/93			30	21.7	38.1%

Total Drill Time = 7.24 Hours
Average Penetration Rate = 12.85 Feet / Hour
Total Redrill Time = 2.00 Hours
Average Penetration Rate = 22.00 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 1.5° E
S-ARC North = 26.76
S-ARC South = 28.55

Quality Coring: None.

Comments:

Primary Pile # 271
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/14/93	2	DHD130A	90		8.58		10.49		05/15/93			24	21.0	14.2%

Total Drill Time = 8.58 Hours
Average Penetration Rate = 10.49 Feet / Hour
Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.31° N X 2.22° E
S-ARC North = 28.55
S-ARC South = 23.70

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/09/93	1	DHD130A	93		7.00			13.29		04/09/93			34	21.7	56.6%

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)				
05/24/93	2	DHD130A	90		8.67		10.38		05/25/93	24.5	21.0	16.6%

Comments:

Secondary Pile # 274
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
04/19/93	1	XL-24	93		3.92		23.72		47.3%

Total Drill Time = 3.92 Hours
Average Penetration Rate = 23.72 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.25" N X 1.5" W
S-ARC North = 31.89
S-ARC South = 22.14

Quality Coring: None.

Comments:

Primary Pile # 275
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
05/21/93	2	DHD130A	90		8.16		11.03		19.0%

Total Drill Time = 8.16 Hours
Average Penetration Rate = 11.03 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .76" S X 1" W
S-ARC North = 22.14
S-ARC South = 27.75

Quality Coring: None.

Comments:

Secondary Pile # 276
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
05/28/93	2	DHD130A	90		5.58		16.13		16.6%

Total Drill Time = 5.58 Hours
Average Penetration Rate = 16.13 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X .5° E
S-ARC North = 27.75
S-ARC South = 30.91

Quality Coring: None.

Comments:

Primary Pile # 277
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
04/23/93	1	DHD130A	93		8.33		11.16		52.0%

Total Drill Time = 8.33 Hours
Average Penetration Rate = 11.16 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.5° N X 3.5° W
S-ARC North = 30.91
S-ARC South = 17.62

Quality Coring: None.

Comments:

Secondary Pile # 278
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/04/93	1	DHD130A	90		6.08		14.80		06/04/93			26.5	21.0	26.1%

Total Drill Time = 6.08 Hours
Average Penetration Rate = 14.80 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2' S X 2.5' W
S-ARC North = 17.62
S-ARC South = 28.69

Quality Coring: None.

Comments:

Primary Pile # 279
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/01/93	2	DHD130A	90		7.75		11.61		07/01/93			26	21.0	23.7%

Total Drill Time = 7.75 Hours
Average Penetration Rate = 11.61 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 25' S X 1.5' E
S-ARC North = 28.69
S-ARC South = 24.09

Quality Coring: None.

Comments:

Secondary Pile # 280
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/04/93	2	DHD130A	34		1.75		19.43		02/05/93		8		7.9	0.8%
06/15/93	1	DHD130A	91	34	4.41	1.42	12.93	23.94	06/15/93			32	21.3	50.6%

Total Drill Time = 6.16 Hours
Average Penetration Rate = 14.77 Feet / Hour

Total Redrill Time = 1.42 Hours
Average Penetration Rate = 23.94 Feet / Hour

Vertically Information
At Full Depth = 1.88" S X 1.6" W
S-ARC North = 24.09
S-ARC South = 29.12

Quality Coring: None.

Comments:

Primary Pile # 281
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/05/93	2	DHD130A	90		6.08		14.80		07/06/93			24	21.0	14.2%

Total Drill Time = 6.08 Hours
Average Penetration Rate = 14.80 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0" N/S X 1" E
S-ARC North = 29.12
S-ARC South = 27.28

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/05/93	1	DHD130A	90		5.50		16.36		06/05/93			32	21.0	52.3%

Total Drill Time = 5.50 Hours
Average Penetration Rate = 16.36 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

Vertically Information

At Full Depth =	5' N X 1.5' W
S-ARC North =	27.28
S-ARC South =	27.90

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time (HRS)	Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (FT./HR)	Redrill (HRS)					
07/21/93	2	DHD130A	90		4.83		18.63	07/22/93		23	21.0	9.4%

Total Drill Time = 4.83 Hours
Average Penetration Rate = 18.63 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

Verticality Information

At Full Depth =	1.5° N X 1.5° E
S-ARC North =	27.90
S-ARC South =	25.30

Quality Coring: None.

Comments:

Secondary Pile # 284
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Redrill (HRS)						
01/28/93	2	DHD130A	63		2.70		23.33			01/29/93		21.5		14.7	46.1%
06/23/93	1	DHD130A	90	63	2.43		11.11	2.92		06/23/93			26	21.0	23.7%

Total Drill Time = 5.13 Hours
Average Penetration Rate = 17.54 Feet / Hour
Total Redrill Time = 2.92 Hours
Average Penetration Rate = 21.58 Feet / Hour

Verticality Information
At Full Depth = .5° N X 1° E
S-ARC North = 25.30
S-ARC South = 29.42

Quality Coring: None.

Comments:

Primary Pile # 285
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
07/05/93	2	DHD130A	90		5.33			16.89		07/06/93			24	21.0	14.2%

Total Drill Time = 5.33 Hours
Average Penetration Rate = 16.89 Feet / Hour
Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.5° N X .5° W
S-ARC North = 29.42
S-ARC South = 24.13

Quality Coring: None.

Comments:

Secondary Pile # 286
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/10/93	1	DHD130A	90		6.58		13.68		06/10/93			32.5	21.0	54.6%

Total Drill Time = 6.58 Hours
Average Penetration Rate = 13.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .76" N X 1.75" W
S-ARC North = 24.13
S-ARC South = 27.11

Quality Coring: None.

Comments:

Primary Pile # 287
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/01/93	2	DHD130A	90		5.00			18.00	07/01/93			23	21.0	9.4%

Total Drill Time = 5.00 Hours
Average Penetration Rate = 18.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" N X 1.25" W
S-ARC North = 27.11
S-ARC South = 22.96

Quality Coring: None.

Comments:

Secondary Pile # 288
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION			
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)					
06/14/93	1	DHD130A	90		6.08		14.80		06/14/93		31.5	21.0	49.9%

Total Drill Time = 6.08 Hours
Average Penetration Rate = 14.80 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" S X 1.75" W
S-ARC North = 22.96
S-ARC South = 30.73

Quality Coring: None.

Comments:

Primary Pile # 289
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/22/93	2	DHD130A	90		5.09		17.68		07/22/93		24	21.0	14.2%	

Total Drill Time = 5.09 Hours
Average Penetration Rate = 17.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" N X 0" E/W
S-ARC North = 30.73
S-ARC South = 27.37

Quality Coring: None.

Comments:

Secondary Pile # 290
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/03/93	2	DHD130A	41		2.58		15.89		02/03/93		13		9.6	35.8%
06/18/93	1	DHD130A	90	41	4.21	1.46	11.64	28.08	06/19/93			28	21.0	33.2%

Total Drill Time = 6.79 Hours
Average Penetration Rate = 13.25 Feet / Hour

Total Redrill Time = 1.46 Hours
Average Penetration Rate = 28.08 Feet / Hour

Verticality Information
At Full Depth = 2' N X 1.77' W
S-ARC North = 27.37
S-ARC South = 23.68

Quality Coring: None.

Comments:

Primary Pile # 291
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/23/93	2	DHD130A	90		4.92		18.29		07/23/94			24.5	21.0	16.6%

Total Drill Time = 4.92 Hours
Average Penetration Rate = 18.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0' N/S X 0' E/W
S-ARC North = 23.68
S-ARC South = 26.61

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/16/93	1	DHD130A	90		6.90		13.04		06/16/93			32	21.0	52.3%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile # 293
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Non-Spec. Concrete (CU.YD.)	Spec. Concrete Volume (CU.YD.)	Overbreak		
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/26/93	2	DHD130A	90		5.16		17.44		07/26/93	24	21.0	14.2%		

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Secondary Pile # 294
Area "A"

Area A

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/12/93	1	DHD130A	90		5.84		15.41		06/12/93			30.5	21.0	45.1%

Total Drill Time = 5.84 Hours
Average Penetration Rate = 15.41 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" N X 0" E/W
S-ARC North = 26.06
S-ARC South = 26.41

Quality Coring: None.

Comments: Connected with pile 258

Primary Pile # 295
Area "A"

CUT-OFF WALL EXCAVATION															CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
07/27/93	2	DHD130A	90		5.67		15.87		07/28/93			24	21.0	14.2%					

Total Drill Time = 5.67 Hours
Average Penetration Rate = 15.87 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .76" N X .25" W
S-ARC North = 26.41
S-ARC South = 25.55

Quality Coring: None.

Comments:

Secondary Pile # 296
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak				
04/08/93	1	DHD130A	59		2.40		24.58			04/08/93				13.8	37.9%				
04/15/93	1	DHD130A	93		2.83		12.01			04/15/93			32	21.7	47.3%				

Total Drill Time = 5.23 Hours
Average Penetration Rate = 17.78 Feet / Hour

Total Redrill Time = 2.00 Hours
Average Penetration Rate = 29.50 Feet / Hour

Vertically Information
At Full Depth = 0' N/S X 2.25' W
S-ARC North = 25.55
S-ARC South = 26.69

Quality Coring: None.

Comments:

Primary Pile # 297
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak				
07/23/94	2	DHD130A	90		4.75		18.95			07/23/94			26	21.0	23.7%				

Total Drill Time = 4.75 Hours
Average Penetration Rate = 18.95 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0' N/S X .76' W
S-ARC North = 26.69
S-ARC South = 28.69

Quality Coring: None.

Comments:

Secondary Pile # 298
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
02/04/93	2	DHD130A	40		3.08		12.99			02/05/93		15		9.3	60.6%
06/04/93	2	DHD130A	49	40	0.63	1.90	14.29	21.05		06/04/93		18		11.4	57.3%
06/29/93	2	DHD130A	90	49	3.16	2.17	12.97	22.58		06/30/93			29	21.0	38.0%

Total Drill Time = 6.87 Hours
Average Penetration Rate = 13.10 Feet / Hour

Total Redrill Time = 4.07 Hours
Average Penetration Rate = 21.87 Feet / Hour

Verticality Information
At Full Depth = 1.5" N X 1.5" E
S--ARC North = 28.69
S--ARC South = 24.53

Quality Coring: 6" Joint core 30.1' deep on 9/27/93

Comments:

Primary Pile # 299
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/26/93	2	DHD 130A	90		5.50		16.36		07/26/93			24	21.0	14.2%

Total Drill Time = 5.50 Hours
Average Penetration Rate = 16.36 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N X .76" E
S--ARC North = 24.53
S--ARC South = 28.06

Quality Coring: None.

Comments:

Secondary Pile # 300
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Grout (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/22/93	2	DHD130A	35	0	3.16	11.08	0.00	01/28/93	LEFT	OPEN	7	8.2	-0.1%	
01/28/93	2	DHD130A	30	35	1.00	22.00	20.96	06/19/93		24	41	7.0	80.3%	
06/18/93	1	DHD130A	57	57	5.83	14.24	16.29	06/28/93				13.3	25.4%	
06/26/93	1	DHD130A	140									32.7		

Total Drill Time = 9.99 Hours
Average Penetration Rate = 17.02 Feet / Hour

Total Redrill Time = 6.17 Hours
Average Penetration Rate = 14.91 Feet / Hour

Verticality Information
At Full Depth = 1.5" N X .75" W
S-ARC North = 27.51
S-ARC South = 22.94

Quality Coring: None.

Comments:

Primary Pile # 301
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/24/93	2	DHD 130A	140		7.33			19.10	07/24/93			37.5	32.7	14.7%

Total Drill Time = 7.33 Hours
Average Penetration Rate = 19.10 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X .5" E
S-ARC North = 22.94
S-ARC South = 30.97

Quality Coring: None.

Comments:

Secondary Pile # 304
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/07/93	2	DHD130A	140		9.50		14.74		07/08/93			42.5	32.7	30.0%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 14.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 24.33
S-ARC South = 25.67

Quality Coring: None.

Comments:

Primary Pile # 305
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment		Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
07/31/93	2		DHD130A	140		9.50			14.74		08/02/93			38	32.7	16.2%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 14.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .76° S X 0° E/W
S-ARC North = 25.67
S-ARC South = 24.61

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
		Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)							Redrill (FT / HR)
07/09/93	2	DHD130A	140		9.83		14.24	07/09/93			51.5	32.7	57.5%	

Verticality Information

At Full Depth =	15° S X 5.92° W
S-ARC North =	24.61
S-ARC South =	29.74

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Grout (CU.YD.)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/29/93	2	DHD130A	140		12.08		11.59			07/29/93		37	32.7	13.2%

1" N X 2" W
At Full Depth = 29.74
S-ARC North = 23.36
S-ARC South =

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)				
07/12/93	2	DHD130A	140		9.08		15.42			47.5	32.7	45.3%

Total Redrill Time =
Average Penetration Rate =
None

Veracity Information

At Full Depth =	1.25' S X 1" W
S-ARC North =	23.36
S-ARC South =	31.04

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Grout (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/02/93	2	DHD130A	140		7.92		17.68			08/03/93		38.5	32.7	17.8%

Total Redrill Time =
Average Penetration Rate =
None

Veracity Information

At Full Depth =	2' N X 5" E
S-ARC North =	31.04
S-ARC South =	21.21

Comments:

Secondary Pile # 310
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/03/93	2	DHD130A	34		1.75		19.43		02/04/93		8		7.9	0.8%
07/14/93	2	DHD130A	140	34	8.58	1.75	12.35	19.43	07/14/93			44	32.7	34.6%

Total Drill Time = 10.33 Hours
Average Penetration Rate = 13.55 Feet / Hour

Total Redrill Time = 1.75 Hours
Average Penetration Rate = 19.43 Feet / Hour

Verticality Information
At Full Depth = 1.5° S X 2.5° E
S-ARC North = 21.21
S-ARC South = 30.73

Quality Coring: None.

Comments:

Primary Pile # 311
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/03/93	2	DHD130A		140		8.84		15.84	08/04/93			38	32.7	16.2%

Total Drill Time = 8.84 Hours
Average Penetration Rate = 15.84 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2° N X 2.25° W
S-ARC North = 30.73
S-ARC South = 27.41

Quality Coring: None.

Comments:

Secondary Pile # 312
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Grout (CU.YD.)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
01/27/93	2	DHD130A	52		3.00		17.33		01/28/93	17			12.1	40.0%	
07/19/93	2	DHD130A	140	52	6.25	2.83	14.08	18.37	07/20/93			40	32.7	22.4%	

Total Drill Time = 9.25 Hours
Average Penetration Rate = 15.14 Feet / Hour

Total Redrill Time = 2.83 Hours
Average Penetration Rate = 18.37 Feet / Hour

Verticality Information
At Full Depth = 3.09° N X 3.09° E
S-ARC North = 27.41
S-ARC South = 25.82

Quality Coring: None.

Comments:

Primary Pile # 313
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
08/05/93	2	DHD130A		140		9.00			15.56	08/05/93			38.5	32.7	17.8%

Total Drill Time = 9.00 Hours
Average Penetration Rate = 15.56 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.5° N X 1° E
S-ARC North = 25.82
S-ARC South = 24.56

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/15/93	2	DHD130A	140		12.09		11.58		07/16/93			50	32.7	52.9%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile # 315
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment	Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Grout (CU.YD.)	Concrete Date	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/06/93		2	DHD 130A		140		9.50		14.74			08/06/93	39	32.7	19.3%

Total Redrill Time =
Average Penetration Rate =

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/21/93	2	DHD130A	140		8.42		16.63		07/21/93			41	32.7	25.4%

Comments:

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)				
08/07/93	2	DHD130A	140		7.66		18.28			39.5	32.7	20.8%

Comments:

Secondary Pile # 318
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/05/93	2	DHD130A	140		12.42		11.27		07/05/93			54	32.7	65.2%

Total Drill Time = 12.42 Hours
Average Penetration Rate = 11.27 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.58" N X 1.05" E
S-ARC North = 20.46
S-ARC South = 24.45

Quality Coring: None.

Comments:

Primary Pile # 319
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/09/93	2	DHD130A	140		8.48		16.51		08/09/93			38	32.7	16.2%

Total Drill Time = 8.48 Hours
Average Penetration Rate = 16.51 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 1.5" E
S-ARC North = 24.45
S-ARC South = 27.99

Quality Coring: None.

Comments:

Secondary Pile # 320
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
06/14/93	1	DHD130A	140		9.58		14.61		
06/23/93	1	DHD130A	140	140		9.58			14.61
Total Drill Time = 9.58 Hours					Concrete Date				
Average Penetration Rate = 14.61 Feet / Hour					Grout (CU.YD.)				
Total Redrill Time = 9.58 Hours					Non-Spec. Concrete (CU.YD.)				
Average Penetration Rate = 14.61 Feet / Hour					Spec. Concrete (CU.YD.)				
					Theoretical Volume (CU.YD.)				
					Overbreak				
					49				
					39				
					32.7				
					32.7				
					49.9%				
					19.3%				

Total Drill Time = 9.58 Hours
Average Penetration Rate = 14.61 Feet / Hour

Total Redrill Time = 9.58 Hours
Average Penetration Rate = 14.61 Feet / Hour

Verticality Information
At Full Depth = 1" N X .75" W
S-ARC North = 27.99
S-ARC South = 26.68

Quality Coring: None.

Comments: PLATFORM COLLAPSE HELD 14 CU. YD. OF CONCRETE. COLLAPSE WAS UNDER THE MAT. AIRLIFTED PILE.

Primary Pile # 321
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
08/10/93	2	DHD130A	140		9.58		14.61		
Total Drill Time = 9.58 Hours					Concrete Date				
Average Penetration Rate = 14.61 Feet / Hour					Grout (CU.YD.)				
Total Redrill Time = None					Non-Spec. Concrete (CU.YD.)				
Average Penetration Rate = None					Spec. Concrete (CU.YD.)				
					Theoretical Volume (CU.YD.)				
					Overbreak				
					39				
					32.7				
					19.3%				

Total Drill Time = 9.58 Hours
Average Penetration Rate = 14.61 Feet / Hour

Total Redrill Time = None

Verticality Information
At Full Depth = 1" N X 1" E
S-ARC North = 26.68
S-ARC South = 27.47

Quality Coring: None.

Comments:

Secondary Pile # 322
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
01/27/93	2	DHD130A	35	35	2.58	1.11	13.57	31.53	01/27/93		8		8.2	-2.1%	
06/04/93	1	DHD130A	40	40	0.33	1.67	15.15	23.95	06/04/93		14		9.3	49.9%	
06/17/93	1	DHD130A	140	40	7.67		13.04		06/18/93			41.5	32.7	26.9%	

Total Drill Time = 10.58 Hours
Average Penetration Rate = 13.23 Feet / Hour

Total Redrill Time = 2.78 Hours
Average Penetration Rate = 26.98 Feet / Hour

Verticality Information
At Full Depth = 1.5" N X 1" E
S--ARC North = 27.47
S--ARC South = 26.00

Quality Coring: None.

Comments:

Primary Pile # 323
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
08/11/93	2	DHD130A	140		9.09		15.40		08/12/93				38	32.7	16.2%

Total Drill Time = 9.09 Hours
Average Penetration Rate = 15.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" N X 0" E/W
S--ARC North = 26.00
S--ARC South = 27.72

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rtg #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/07/93	1	DHD130A	140		9.58		14.61		06/08/94			48	32.7	46.8%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments: Water flow eroded hole at 25' causing a cavity after drilling.

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/13/93	2	DHD 130A	140		9.57		14.63		08/13/93			37.5	32.7	14.7%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/11/93	1	DHD130A	140		11.49		12.18		06/12/93			54.5	32.7	66.7%

Total Redrill Time = None

Quality Coring: None.

Primary Pile # 327
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/23/93	2	DHD130A	140		10.41		13.45		07/23/93			39	32.7	19.3%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Secondary Pile # 328
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
02/03/93	2	DHD130A	34		0.75		45.33		
06/21/93	1	DHD130A	140	34	8.08	1.50	13.12		22.67
Total Drill Time = 8.83 Hours									
Average Penetration Rate = 15.86 Feet / Hour									
Total Redrill Time = 1.50 Hours									
Average Penetration Rate = 22.67 Feet / Hour									
Verticality Information									
At Full Depth = 2.07" S X 1.56" E									
S-ARC North = 23.63									
S-ARC South = 25.32									
Quality Coring: None.									
Comments:									

Primary Pile # 329
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
08/19/93	2	DHD130A	140		7.67		18.25		
Total Drill Time = 7.67 Hours									
Average Penetration Rate = 18.25 Feet / Hour									
Total Redrill Time = None									
Average Penetration Rate =									
Verticality Information									
At Full Depth = 3" S X 0" E/W									
S-ARC North = 25.32									
S-ARC South = 30.42									
Quality Coring: None.									
Comments:									

Secondary Pile # 330
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/28/93	1	DHD130A		141					06/28/93			45	32.9	36.7%

Total Drill Time =
Average Penetration Rate =

Total Redrill Time =
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 3.5° W
S-ARC North = 26.69
S-ARC South = 27.77

Quality Coring: None.

Comments:

Primary Pile # 331
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/21/93	2	DHD130A	140		7.34		19.07		08/23/93			39	32.7	19.3%

Total Drill Time = 7.34 Hours
Average Penetration Rate = 19.07 Feet / Hour

Total Redrill Time =
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 2° W
S-ARC North = 27.77
S-ARC South = 25.67

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/01/93	1	DHD130A	140		10.83		12.93		07/01/93			47	32.7	43.8%

Vertically Information

At Full Depth =	.75° N X .75° W
S-ARC North =	25.67
S-ARC South =	33.28

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)				
07/28/93	2	DHD130A	140		10.08		13.89		07/28/93	39	32.7	19.3%

Verticality Information
 At Full Depth = O° N/S X .76° W
 S-ARC North = 33.28
 S-ARC South = 25.97

Comments:

Secondary Pile # 334
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/06/93	2	DHD130A	140		11.17		12.53		07/06/93			42.5	32.7	30.0%

Total Drill Time = 11.17 Hours
Average Penetration Rate = 12.53 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5' N X 0" E/W
S-ARC North = 25.97
S-ARC South = 25.23

Quality Coring: None.

Comments:

Primary Pile # 335
Area "A"

Area 'A'

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/31/93	2	DHD130A	140		8.17		17.14		08/02/93			40	32.7	22.4%

Total Drill Time = 8.17 Hours
Average Penetration Rate = 17.14 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4.5' N X 1.51" E
S-ARC North = 25.23
S-ARC South = 20.50

Quality Coring: None.

Comments:

Secondary Pile # 336
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Redrill (FT)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
01/21/93	2	DHD130A	53		8.91		5.95										12.4		
06/16/93	1	DHD130A	140	53	10.00	0.50	8.70	106.00					06/17/93		56		32.7	71.3%	
07/19/93	2	DHD130A	140	140		6.83		20.50					07/19/93			40	32.7	22.4%	

Total Drill Time = 18.91 Hours
Average Penetration Rate = 7.40 Feet / Hour

Total Redrill Time = 7.33 Hours
Average Penetration Rate = 26.33 Feet / Hour

Verticality Information
At Full Depth = 3.75° N X 5.38° E
S-ARC North = 20.50
S-ARC South = 25.94

Quality Coring: None.

Comments: Used hole as a sump

Primary Pile # 337
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Redrill (FT)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
07/29/93	2	DHD130A	140		7.50		18.67						07/29/93			37.5	32.7	14.7%	

Total Drill Time = 7.50 Hours
Average Penetration Rate = 18.67 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 1.75° E
S-ARC North = 25.94
S-ARC South = 26.02

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/08/93	2	DHD130A	140		17.25		8.12		07/09/93			53	32.7	62.1%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/30/93	2	DHD 130A		140		8.11		17.26	07/30/93			37	32.7	13.2%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment	Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/10/93		2	DHD130A	140		14.34		9.76		07/12/94			48	32.7	46.8%

Total Drill Time = 14.34 Hours
Average Penetration Rate = 9.76 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

0" N/S X 0" EW
At Full Depth = 28.13
S-ARC North = 31.44
S-ARC South =

Quality Coring: None.

Comments:

Primary Pile # 341

Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Pig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/03/93	2	DHD130A		140		9.42		14.86		08/03/93		38	32.7	16.2%

Total Drill Time = 9.42 Hours
Average Penetration Rate = 14.86 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

At Full Depth =	3.5° N X 0° EW
S-ARC North =	31.44
S-ARC South =	23.26

Quality Coring: None.

Comments:

Secondary Pile # 342
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/13/93	2	DHD130A	140		9.08		15.42		07/13/93			43	32.7	31.5%

Total Drill Time = 9.08 Hours
Average Penetration Rate = 15.42 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.25" N X 2" E
S-ARC North = 23.26
S-ARC South = 28.83

Quality Coring: None.

Comments:

Primary Pile # 343
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
08/04/93	2	DHD130A	140		10.34			13.54		08/04/93			38	32.7	16.2%

Total Drill Time = 10.34 Hours
Average Penetration Rate = 13.54 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.77" N X 1.5" E
S-ARC North = 28.83
S-ARC South = 25.81

Quality Coring: None.

Comments:

Secondary Pile # 344
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/23/93	1	DHD130A	46		2.00		23.00			06/24/93		17.5		10.7	62.9%
07/16/93	2	DHD130A	140	46	7.50	2.67	12.53	17.23		07/16/93			37.5	32.7	14.7%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 14.74 Feet / Hour

Total Redrill Time = 2.67 Hours
Average Penetration Rate = 17.23 Feet / Hour

Verticality Information
At Full Depth = 2.15" N X 0" EW
S-ARC North = 25.81
S-ARC South = 25.08

Quality Coring: None.

Comments:

Primary Pile # 345
Area "A"

Area 'A'

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
08/06/93	2	DHD130A	140		8.25		16.97		08/06/93			41	32.7	25.4%	

Total Drill Time = 8.25 Hours
Average Penetration Rate = 16.97 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" N X 1" W
S-ARC North = 25.08
S-ARC South = 20.42

Quality Coring: None.

Comments:

Secondary Pile # 346
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/08/93	1	DHD130A	90		9.00		10.00		06/09/93		38		21.0	80.8%
06/25/93	1	DHD130A	120	90	1.92	3.08	15.63	29.22	06/28/93		32		28.0	14.2%
07/26/93	2	DHD130A	140	120	1.50	8.49	13.33	14.13	07/27/93			38	32.7	16.2%

Total Drill Time = 12.42 Hours
Average Penetration Rate = 11.27 Feet / Hour

Total Redrill Time = 11.57 Hours
Average Penetration Rate = 18.15 Feet / Hour

Verticality Information
At Full Depth = 3° S X 0° E/W
S--ARC North = 20.42
S--ARC South = 30.52

Quality Coring: None.

Comments: PILE CAVED IN ON 6/9/93 AND 6/25/93.

Primary Pile # 347
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/07/93	2	DHD130A		140		8.16		17.16	08/07/93			40	32.7	22.4%

Total Drill Time = 8.16 Hours
Average Penetration Rate = 17.16 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 3° W
S--ARC North = 30.52
S--ARC South = 25.86

Quality Coring: None.

Comments:

Secondary Pile # 348
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/21/93	1	DHD130A	140		12.42		11.27			06/22/93		48		32.7	46.8%
07/28/93	1	DHD130A	140	140		6.33		22.12		07/29/93			40	32.7	22.4%

Total Drill Time = 12.42 Hours
Average Penetration Rate = 11.27 Feet / Hour

Total Redrill Time = 6.33 Hours
Average Penetration Rate = 22.12 Feet / Hour

Verticality Information
At Full Depth = .5" S X .5" W
S-ARC North = 25.86
S-ARC South = 28.77

Quality Coring: None.

Comments: PLATFORM COLLAPSE AND PILE CAVE IN.

Primary Pile # 349
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/10/93	2	DHD130A	140		9.92		14.11		08/10/93			38.5	32.7	17.8%

Total Drill Time = 9.92 Hours
Average Penetration Rate = 14.11 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" N X 1" E
S-ARC North = 28.77
S-ARC South = 27.78

Quality Coring: None.

Comments:

Secondary Pile # 350
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/24/93	2	DHD130A	140		10.09		13.88		07/26/93			57	32.7	74.4%

Total Drill Time = 10.09 Hours
Average Penetration Rate = 13.88 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.75" N X 0" EW
S-ARC North = 27.78
S-ARC South = 27.80

Quality Coring: None.

Comments:

Primary Pile # 351
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/11/93	2	DHD130A	140		8.25		16.97		08/11/93			38.5	32.7	17.8%

Total Drill Time = 8.25 Hours
Average Penetration Rate = 16.97 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.5" N X .75" E
S-ARC North = 27.80
S-ARC South = 28.04

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
07/22/93	2	DHD-130A	140		10.92		12.82			07/23/93			75	32.7	129.4%

Total Redrill Time =
Average Penetration Rate =
None

Vertically Information

At Full Depth =	3.5°N X 2.75° E
S-ARC North =	28.04
S-ARC South =	22.76

Comments: Hit a cavity 23-24' deep. Hole collapsed and had to be cleaned out.

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)				
08/12/93	2	DHD130A	140		11.15		12.56			37	32.7	13.2%

Total Redrill Time =
Average Penetration Rate =
None

Verticality Information

At Full Depth =	1" N X 0" E/W
S-ARC North =	22.76
S-ARC South =	23.75

Comments:

Secondary Pile # 354
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/21/93	2	DHD130A	140		10.09		13.88		07/21/93			47	32.7	43.8%

Total Drill Time = 10.09 Hours
Average Penetration Rate = 13.88 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X 1" E
S-ARC North = 23.75
S-ARC South = 28.16

Quality Coring: None.

Comments:

Primary Pile # 355
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/16/93	2	DHD130A	140		9.50		14.74		08/17/93			39	32.7	19.3%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 14.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 1" E
S-ARC North = 28.16
S-ARC South = 26.73

Quality Coring: None.

Comments:

Secondary Pile # 356
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
01/29/93	2	DHD130A	47		3.75		12.53			02/01/93		16		11.0	45.8%
07/20/93	2	DHD130A	140	47	11.84	2.17	7.85	21.66		07/20/93			40	32.7	22.4%

Secondary Pile # 358
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/14/93	2	DHD130A	140		10.50		13.33		07/14/93			52	32.7	59.1%

Total Drill Time = 10.50 Hours
Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 30.79
S-ARC South = 26.76

Quality Coring: None.

Comments:

Primary Pile # 359
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/21/93	2	DHD130A	140		7.67		18.25		08/22/93			37	32.7	13.2%

Total Drill Time = 7.67 Hours
Average Penetration Rate = 18.25 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 26.76
S-ARC South = 29.47

Quality Coring: None.

Comments:

Secondary Pile # 360
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date
03/01/93	1	DHD130A	29		1.50		19.33		03/01/93
03/11/93	1	DHD130A	51	29	1.66	1.00	13.25	29.00	03/11/93
04/20/93	1	DHD130A	65	51	0.50	0.67	26.00	76.12	04/21/93
07/17/93	2	DHD130A	140	65	7.58	2.83	9.89	22.97	07/19/93
Total Drill Time = 11.24 Hours									
Average Penetration Rate = 12.46 Feet / Hour									
Total Redrill Time = 4.50 Hours									
Average Penetration Rate = 32.22 Feet / Hour									
Verticality Information									
At Full Depth = 2.09" N X 2.09" E									
S-ARC North = 29.47									
S-ARC South = 27.56									
Quality Coring: None.									
Comments:									

Primary Pile # 361
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date
08/16/93	2	DHD130A	140		7.75		18.06		08/17/93
Total Drill Time = 7.75 Hours									
Average Penetration Rate = 18.06 Feet / Hour									
Total Redrill Time = None									
Average Penetration Rate =									
Verticality Information									
At Full Depth = 3" N X 2" W									
S-ARC North = 27.56									
S-ARC South = 25.30									
Quality Coring: None.									
Comments:									

Secondary Pile # 362
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
07/01/93	1	DHD130A	140		7.92			17.68		07/01/93			43.5	32.7	33.1%

Total Drill Time = 7.92 Hours
Average Penetration Rate = 17.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.5" N X 3" E
S-ARC North = 25.30
S-ARC South = 22.92

Quality Coring: None.

Comments:

Primary Pile # 363
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/06/93	2	DHD130A	140		7.34			19.07	08/07/93			39	32.7	19.3%

Total Drill Time = 7.34 Hours
Average Penetration Rate = 19.07 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 1.5" E
S-ARC North = 22.92
S-ARC South = 27.28

Quality Coring: None.

Comments:

Secondary Pile # 364
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/02/93	1	DHD130A	45		2.50		18.00		03/03/93		10		10.5	-4.8%	
07/07/93	2	DHD130A	140	45	10.75	2.17	8.84	20.74	07/07/93			40.5	32.7	23.9%	

Total Drill Time = 13.25 Hours
Average Penetration Rate = 10.57 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 20.74 Feet / Hour

Vertically Information
At Full Depth = .5" N X 1" W
S-ARC North = 27.28
S-ARC South = 28.16

Quality Coring: None.
Comments:

Primary Pile # 365
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
08/02/93	2	DHD130A	140		11.08			12.64		08/02/93			38	32.7	16.2%

Total Drill Time = 11.08 Hours
Average Penetration Rate = 12.64 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 1.5" N X 1" W
S-ARC North = 28.16
S-ARC South = 24.53

Quality Coring: None.
Comments:

Secondary Pile # 366
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
06/25/93	1	DHD130A	141		11.75		12.00		06/26/93			66	32.9	100.4%	

Total Drill Time = 11.75 Hours
Average Penetration Rate = 12.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 2° W
S-ARC North = 24.53
S-ARC South = 23.79

Quality Coring: None.

Comments: Hole collapsed and had to be cleaned out.

Primary Pile # 367
Area "A"

Area A

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Redrill (HRS)	Redrill (FT / HR)	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
07/30/93	2	DHD130A		140		9.59		14.60					37	32.7	13.2%

Total Drill Time = 9.59 Hours
Average Penetration Rate = 14.60 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2° S X 2.27° W
S-ARC North = 23.79
S-ARC South = 27.65

Quality Coring: None.

Comments:

Secondary Pile # 368
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Overbreak
06/15/93	1	DHD130A	92		6.75	13.63		06/15/93	67.6%
06/22/93	1	DHD130A	141	92	3.17	15.46	16.73	06/22/93	18.4%

Total Drill Time = 9.92 Hours
Average Penetration Rate = 14.21 Feet / Hour

Total Redrill Time = 5.50 Hours
Average Penetration Rate = 16.73 Feet / Hour

Verticality Information
At Full Depth = 1.25" S X 0" EW
S-ARC North = 27.65
S-ARC South = 29.68

Quality Coring: 6" Joint core 29.9' deep on 10/28/93.

Comments:

Primary Pile # 369
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Overbreak
08/04/93	2	DHD130A	140		8.50	16.47		08/04/93	16.2%

Total Drill Time = 8.50 Hours
Average Penetration Rate = 16.47 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.09" N X 2.27" E
S-ARC North = 29.68
S-ARC South = 27.44

Quality Coring: See pile 368

Comments:

Secondary Pile # 370
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/01/93	1	DHD130A	31		1.83		16.94		03/01/93		9		7.2	24.3%
03/12/93	1	DHD130A	51	31	0.41	3.00	48.78	10.33	03/12/93		14		11.9	17.6%
06/17/93	1	DHD130A	140	51	8.75	3.16	10.17	16.14	06/17/93			41	32.7	25.4%

Total Drill Time = 10.99 Hours
Average Penetration Rate = 12.74 Feet / Hour

Total Redrill Time = 6.16 Hours
Average Penetration Rate = 13.31 Feet / Hour

Verticality Information
At Full Depth = 1.5" N X 3" E
S-ARC North = 27.44
S-ARC South = 29.74

Quality Coring: None.

Comments: Cavity observed 25'-45'.

Primary Pile # 371
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/05/93	2	DHD130A	140		7.25		19.31		08/05/93			38	32.7	16.2%

Total Drill Time = 7.25 Hours
Average Penetration Rate = 19.31 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.78" N X 1.26" E
S-ARC North = 29.74
S-ARC South = 21.79

Quality Coring: None.

Comments:

Secondary Pile # 372
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/12/93	1	DHD130A	140		11.24		12.46		06/12/93			47	32.7	43.8%

Total Drill Time = 11.24 Hours
Average Penetration Rate = 12.46 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5° N X .79° E
S-ARC North = 21.79
S-ARC South = 32.63

Quality Coring: None.

Comments:

Primary Pile # 373
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/09/93	2	DHD130A	140		8.75		16.00		08/09/93			38.5	32.7	17.8%

Total Drill Time = 8.75 Hours
Average Penetration Rate = 16.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5° N X 0° E/W
S-ARC North = 32.63
S-ARC South = 29.68

Quality Coring: None.

Comments:

Secondary Pile # 374
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/03/93	1	DHD130A	50		2.16		23.15						11.7	-100.0%	
06/09/93	1	DHD130A	141	50	10.00	3.50	9.10	14.29	06/10/93		SUMP	61	32.9	85.3%	

Total Drill Time = 12.16 Hours
Average Penetration Rate = 11.60 Feet / Hour

Total Redrill Time = 3.50 Hours
Average Penetration Rate = 14.29 Feet / Hour

Verticality Information
At Full Depth = 7.58° N X 4.08° W
S-ARC North = 29.68
S-ARC South = 22.34

Quality Coring: Used as a sump for 3 months.

Comments:

Primary Pile # 375
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
08/11/93	2	DHD130A	140		10.50		13.33		08/11/93			40	32.7	22.4%	

Total Drill Time = 10.50 Hours
Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4.78° N X 1.5° W
S-ARC North = 22.34
S-ARC South = 18.43

Quality Coring: None.

Comments:

Secondary Pile # 376
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/24/93	1	DHD130A	141		9.58		14.72		06/24/93			32	32.9	-2.8%

Total Drill Time = 9.58 Hours
Average Penetration Rate = 14.72 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 0° N/S X 6° W
S-ARC North = 18.43
S-ARC South = 28.79

Quality Coring: None.

Comments:

Primary Pile # 377
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/12/93	2	DHD130A	140		9.08		15.42		08/12/93			38	32.7	16.2%

Total Drill Time = 9.08 Hours
Average Penetration Rate = 15.42 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 1.5° N X 5° W
S-ARC North = 28.79
S-ARC South = 20.47

Quality Coring: None.

Comments:

Secondary Pile # 378
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Overbreak
03/10/93	1	DHD130A	65		4.00	16.25		03/10/93	61.4%
07/02/93	1	DHD130A	141	65	9.75	7.79	19.52	07/02/93	42.7%

Total Drill Time = 13.75 Hours
Average Penetration Rate = 10.25 Feet / Hour

Total Redrill Time = 3.33 Hours
Average Penetration Rate = 19.52 Feet / Hour

Vertically Information
At Full Depth = 2.5" S X 4.78"W
S-ARC North = 20.47
S-ARC South = 29.84

Quality Coring: None.

Comments:

Primary Pile # 379
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Overbreak
08/17/93	2	DHD130A	140		9.42	14.86		08/17/93	19.3%

Total Drill Time = 9.42 Hours
Average Penetration Rate = 14.86 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0" N/S X 1.5" W
S-ARC North = 29.84
S-ARC South = 25.50

Quality Coring: None.

Comments:

Secondary Pile # 380
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/01/93	1	DHD130A	32		1.75		18.29		03/01/93		7		7.5	-6.3%
06/28/93	1	DHD130A	61	32	0.91	1.09	31.87	29.36	06/29/93		25.5		14.2	79.0%
07/07/93	1	DHD130A	140	61	10.50	4.25	7.52	14.35	07/08/93			47.5	32.7	45.3%

Total Drill Time = 13.16 Hours
Average Penetration Rate = 10.64 Feet / Hour

Total Redrill Time = 5.34 Hours
Average Penetration Rate = 17.42 Feet / Hour

Verticality Information
At Full Depth = .75" S X 1" E
S-ARC North = 25.50
S-ARC South = 31.67

Quality Coring: None.

Comments:

Primary Pile # 381
Area "A"

Area A

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/20/93	2	DHD130A	140		6.33		22.12		08/21/93			38	32.7	16.2%

Total Drill Time = 6.33 Hours
Average Penetration Rate = 22.12 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3" N X .5" W
S-ARC North = 31.67
S-ARC South = 22.87

Quality Coring: None.

Comments: Connected with pile 408

Secondary Pile # 382
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date
06/30/93	1	DHD130A	61		1.75		34.86		06/30/93
07/09/93	2	DHD130A	140	61	7.42	3.50	10.65	17.43	07/10/93
Total Drill Time = 9.17 Hours									
Average Penetration Rate = 15.27 Feet / Hour									
Total Redrill Time = 3.50 Hours									
Average Penetration Rate = 17.43 Feet / Hour									

Verticality Information
At Full Depth = .5" N X 1.5" E
S-ARC North = 22.87
S-ARC South = 28.09

Quality Coring: None.

Comments:

Primary Pile # 383
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date
08/23/93	2	DHD130A	140		9.80		14.29		08/24/93
Total Drill Time = 9.80 Hours									
Average Penetration Rate = 14.29 Feet / Hour									
Total Redrill Time = None									
Average Penetration Rate =									

Verticality Information
At Full Depth = 1.5" N X 0" E/W
S-ARC North = 28.09
S-ARC South = 24.56

Quality Coring: None.

Comments:

Secondary Pile # 384
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/03/93	1	DHD130A	59		5.41		10.91		03/04/93		22		13.8	59.7%
03/11/93	1	DHD130A	65	59	0.25	0.75	24.00	78.67	03/12/93		16		15.2	5.4%
07/16/93	2	DHD130A	140	65	9.25	3.75	8.11	17.33	07/17/93			43	32.7	31.5%

Total Drill Time = 14.91 Hours
Average Penetration Rate = 9.39 Feet / Hour

Total Redrill Time = 4.50 Hours
Average Penetration Rate = 27.56 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 24.56
S-ARC South = 22.16

Quality Coring: None.

Comments:

Primary Pile # 385
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/30/93	2	240	140		4.41		31.75		08/31/93			38	32.7	16.2%

Total Drill Time = 4.41 Hours
Average Penetration Rate = 31.75 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3° S X 1° W
S-ARC North = 22.16
S-ARC South = 27.99

Quality Coring: None.

Comments:

Secondary Pile # 386
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/13/93	2	DHD130A	140		15.25		9.18		07/14/93			58	32.7	77.4%

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
		Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)							Redrill (FT / HR)
07/15/93	2	DHD130A	140		8.75		16.00	07/15/93			71	32.7	117.2%	

0° N/S X 2.9° E	
30.34	
22.18	
At Full Depth =	
S-ARC North =	
S-ARC South =	

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/14/93	2	240		140		5.00		28.00				38	32.7	16.2%

Verticality Information

At Full Depth =	2.77" SX .76" W
S-ARC North =	22.18
S-ARC South =	30.16

Comments:

Secondary Pile # 390
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/01/93	1	DHD130A		31		1.25		24.80	03/01/93		9		7.2	24.3%
06/22/93	1	DHD130A		48	31	0.84	1.83	20.24	06/22/93		24		11.2	114.1%
08/13/93	2	DHD130A		140	48	6.83	2.75	13.47	08/16/93			41	32.7	25.4%

Total Drill Time = 8.92 Hours
Average Penetration Rate = 15.70 Feet / Hour

Total Redrill Time = 4.58 Hours
Average Penetration Rate = 17.25 Feet / Hour

Vertically Information
At Full Depth = .25° S X .75° W
S-ARC North = 30.16
S-ARC South = 25.55

Quality Coring: None.

Comments:

Primary Pile # 391
Area "A"

CUT - OFF WALL EXCAVATION							CUT - OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
09/15/93	2	DHD130A	140		7.17		19.53			09/16/93			38	32.7	16.2%

Total Drill Time = 7.17 Hours
Average Penetration Rate = 19.53 Feet / Hour

Total Redrill Time = None

Vertically Information
At Full Depth = 1° S X 1.25° E
S-ARC North = 25.55
S-ARC South = 28.07

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
		Drill (FT)	Excavation Method	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)							Redrill (FT / HR)
07/23/93	1		DHD130A	140		7.58		18.47	08/11/93			57.5	32.7	75.9%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile # 393
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volumes (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date					Grout (CU.YD.)
09/28/93	2	DHD130A	140		8.84			15.84			39	32.7	19.3%	

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/20/93	2	DHD130A	140		10.78		12.99		08/21/93			46	32.7	40.7%

Total Bedrill Time =

Total Redrill Time =
Average Penetration Rate =

Quality Coring: None.

Primary Pile # 395
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment	Drill Footage			Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/14/93	2	XL-24	140		5.42		25.83		09/15/93			38	32.7	16.2%

Total Redrill Time =

Average Penetration Rate =

None

Quality Coring: None.

Comments:

Secondary Pile # 396
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Overbreak
09/27/93	2	DHD130A	140		7.25		19.31		51.4%

Total Drill Time = 7.25 Hours
Average Penetration Rate = 19.31 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.86° S X 4.69° W
S-ARC North = 20.69
S-ARC South = 28.39

Quality Coring: None.

Comments:

Primary Pile # 397
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Overbreak
09/25/93	2	DHD130A	140		8.67		16.15		13.2%

Total Drill Time = 8.67 Hours
Average Penetration Rate = 16.15 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.5° S X 2° W
S-ARC North = 28.39
S-ARC South = 26.02

Quality Coring: None.

Comments:

Secondary Pile # 398
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/30/93	2	DHD130A	140		7.16		19.55		09/01/93			59	32.7	80.5%

Total Drill Time = 7.16 Hours
Average Penetration Rate = 19.55 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 3° S X 1° W
S-ARC North = 26.02
S-ARC South = 28.13

Quality Coring: None.

Comments:

Primary Pile # 399
Area "A"

Area A

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/23/93	2	DHD 130A		140		10.17		13.77	09/23/94			38	32.7	16.2%

Total Drill Time = 10.17 Hours
Average Penetration Rate = 13.77 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 2° S X 0° E/W
S-ARC North = 28.13
S-ARC South = 27.11

Quality Coring: None.

Comments:

Secondary Pile # 400
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date
03/01/93	1	DHD130A	31		1.75		17.71		03/02/93
03/10/93	1	DHD130A	64	31	0.75	0.92	44.00	33.70	03/11/93
09/09/93	2	DHD130A	140	64	4.25	1.33	17.88	48.12	09/09/93
Total Drill Time = 6.75 Hours									
Average Penetration Rate = 20.74 Feet / Hour									
Total Redrill Time = 2.25 Hours									
Average Penetration Rate = 42.22 Feet / Hour									
Verticality Information									
At Full Depth = 1.75° S X .5° W									
S-ARC North = 24.17									
S-ARC South = 30.80									
Quality Coring: 6' Joint core; 400/401; 10/26/93									
Comments:									

Primary Pile # 401
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date
09/21/93	2	DHD130A	140		7.92		17.68		09/22/93
Total Drill Time = 7.92 Hours									
Average Penetration Rate = 17.68 Feet / Hour									
Total Redrill Time = None									
Average Penetration Rate =									
Verticality Information									
At Full Depth = 1.25° N X .75° W									
S-ARC North = 30.80									
S-ARC South = 24.78									
Quality Coring: None.									
Comments:									

Secondary Pile # 402
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/24/93	1	DHD130A	63		1.92		32.81		06/24/93		25		14.7	69.9%
09/10/93	2	DHD130A	140	63	5.41	3.75	14.23	16.80	09/10/93			41	32.7	25.4%

Total Drill Time = 7.33 Hours
Average Penetration Rate = 19.10 Feet / Hour
Total Redrill Time = 3.75 Hours
Average Penetration Rate = 16.80 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 3° W
S-ARC North = 24.78
S-ARC South = 33.29

Quality Coring: None.

Comments:

Primary Pile # 403
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/18/93	2	DHD130A	140		7.92			17.68	09/18/93			38	32.7	16.2%

Total Drill Time = 7.92 Hours
Average Penetration Rate = 17.68 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information
At Full Depth = 5° N X 2.75° W
S-ARC North = 33.29
S-ARC South = 18.34

Quality Coring: None.

Comments:

Secondary Pile # 404
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/26/93	2	DHD130A	140		7.08		19.77		08/26/93			55	32.7	68.2%

Total Drill Time = 7.08 Hours
Average Penetration Rate = 19.77 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 18.34
S-ARC South = 25.86

Quality Coring: None.

Comments:

Primary Pile # 405
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/29/93	2	DHD130A	140		9.16		15.28		09/29/93			38	32.7	16.2%

Total Drill Time = 9.16 Hours
Average Penetration Rate = 15.28 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5° S X 2.5° W
S-ARC North = 25.86
S-ARC South = 29.77

Quality Coring: None.

Comments:

Secondary Pile # 406
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Theoretical Volume (CU.YD.)
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
08/23/93	2	DHD130A	140		9.25		15.14		32.7
									50
									08/23/93
									52.9%

Total Drill Time = 9.25 Hours
Average Penetration Rate = 15.14 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.75" N X 1.25" W
S-ARC North = 29.77
S-ARC South = 26.39

Quality Coring: None.

Comments:

Primary Pile # 407
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Theoretical Volume (CU.YD.)
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
09/30/93	2	DHD130A	140		8.84		15.84		32.7
									39
									10/01/93
									19.3%

Total Drill Time = 8.84 Hours
Average Penetration Rate = 15.84 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" N X .5" W
S-ARC North = 26.39
S-ARC South = 22.71

Quality Coring: None.

Comments:

Secondary Pile # 408
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/18/93	2	DHD130A	140		13.16		10.64		08/19/93			69.5	32.7	112.6%

Total Drill Time = 13.16 Hours
Average Penetration Rate = 10.64 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X 3.5" W
S-ARC North = 22.71
S-ARC South = 30.11

Quality Coring: None.

Comments: Connected to piles 443, 445, & 381

Primary Pile # 409
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/02/93	2	DHD130A	140		8.33		16.81		10/02/93			38	32.7	16.2%

Total Drill Time = 8.33 Hours
Average Penetration Rate = 16.81 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" N X 2.25" W
S-ARC North = 30.11
S-ARC South = 31.07

Quality Coring: None.

Comments:

Secondary Pile # 410
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
03/01/93	1	DHD130A	22		1.66		13.25		
03/04/93	1	DHD130A	42		0.58	0.17	72.41		0.00
03/11/93	1	DHD130A	65		0.41	0.17	158.54		0.00
08/24/93	2	DHD130A	140	65	5.42	2.17	13.84		29.95
Total Drill Time = 8.07 Hours									
Average Penetration Rate = 25.28 Feet / Hour									
Total Redrill Time = 2.51 Hours									
Average Penetration Rate = 25.90 Feet / Hour									
Verticality Information									
At Full Depth = 4.75" N X 1" W									
S-ARC North = 31.07									
S-ARC South = 22.15									
Quality Coring: None.									
Comments:									

Primary Pile # 411
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
09/29/93	2	DHD130A	140		8.67		16.15		
Total Drill Time = 8.67 Hours									
Average Penetration Rate = 16.15 Feet / Hour									
Total Redrill Time = None									
Average Penetration Rate =									
Verticality Information									
At Full Depth = 1.75" N X 0" EW									
S-ARC North = 22.15									
S-ARC South = 27.34									
Quality Coring: None.									
Comments:									

Secondary Pile # 412
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/05/93	1	DHD130A	171		20.17		8.48		08/13/93			83.5	39.9	109.1%

Total Drill Time = 20.17 Hours
Average Penetration Rate = 8.48 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.67" N X 1.33" E
S-ARC North = 27.34
S-ARC South = 22.69

Quality Coring: NX/NQ cored 177.2' deep on 11/04/93.

Comments: Hole collapsed after completion, had to be cleaned; connected to 442

Primary Pile # 413
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/01/93	2	DHD130A	170		10.66		15.95		10/01/93			46	39.7	15.9%

Total Drill Time = 10.66 Hours
Average Penetration Rate = 15.95 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0 N/S X 0 E/W
S-ARC North = 22.69
S-ARC South = 25.19

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/03/93	1	DHD130A	170		14.17		12.00		08/03/93			58	39.7	46.1%

Veracity Information

At Full Depth =	1°S X 2°E
S-ARC North =	25.19
S-ARC South =	29.16

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/27/93	2	DHD130A	170		10.34			16.44	09/27/93			45.5	39.7	14.6%

Vertically Information

At Full Depth =	.75" N X 1.5" E
S-ARC North =	29.16
S-ARC South =	24.56

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rtg #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/22/93	2	DHD130A	170		10.42		16.31		07/22/93			57	39.7	43.6%

Total Redrill Time =
Average Penetration Rate =
None

Verticality Information

At Full Depth =	.75° S X 2.25° E
S-ARC North =	24.56
S-ARC South =	27.46

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete Volume (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/13/93	2	240	170		5.83		29.16		09/14/93			47	39.7	18.4%

Total Redrill Time =
Average Penetration Rate =
None

Vertically Information

At Full Depth =	.25° S X 2° E
S-ARC North =	27.46
S-ARC South =	30.08

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rtg #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Drill (FT / HRS)	Redrill (HRS)	Penetration Rate (FT / HRS)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/20/93	1	DHD130A	170	11.83			14.37	07/21/93			55	39.7	38.5%

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
09/24/93	2	DHD130A	170		9.50			17.89		09/24/93			48	39.7	20.9%

Comments:

Secondary Pile # 420
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/02/93	1	DHD130A	33		1.41		23.40		03/02/93		9		7.7	16.8%	
06/24/93	1	DHD130A	60	33	5.00	2.33	5.40	14.16			OPEN HOLE	68.5	39.7	72.6%	
07/05/93	1	DHD130A	170	0	4.83		35.20		07/05/93						

Total Drill Time = 11.24 Hours
Average Penetration Rate = 20.46 Feet / Hour

Total Redrill Time = 2.33 Hours
Average Penetration Rate = 14.16 Feet / Hour

Vertically Information
At Full Depth = 5.15' N X 3.09' E
S-ARC North = 39.60
S-ARC South = 18.30

Quality Coring: None.

Comments:

Primary Pile # 421
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
09/16/93	2	DHD130A	170		9.33			18.22		09/16/93			44	39.7	10.8%

Total Drill Time = 9.33 Hours
Average Penetration Rate = 18.22 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0' N/S X 1.5' E
S-ARC North = 18.30
S-ARC South = 23.50

Quality Coring: None.

Comments:

Secondary Pile # 422
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
06/30/93	1	DHD130A	170		17.92		9.49		88.9%

Total Drill Time = 17.92 Hours
Average Penetration Rate = 9.49 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.75° S X 6.29° E
S-ARC North = 23.50
S-ARC South = 19.66

Quality Coring: None.

Comments: Hole collapsed

Primary Pile # 423
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
09/22/93	2	DHD130A	170		10.83		15.70		15.9%

Total Drill Time = 10.83 Hours
Average Penetration Rate = 15.70 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5.33° S X 0° E/W
S-ARC North = 19.66
S-ARC South = 33.88

Quality Coring: None.

Comments: Connected with hole 399

Secondary Pile # 424
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/04/93	1	DHD130A	64		2.50		25.60		03/04/93		19		14.9	27.1%
07/07/93	1	DHD130A	170	64	8.52		12.44	2.66	07/08/93			53	39.7	33.5%

Total Drill Time = 11.02 Hours
Average Penetration Rate = 15.43 Feet / Hour

Total Redrill Time = 2.66 Hours
Average Penetration Rate = 24.06 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 33.88
S-ARC South = 17.71

Quality Coring: None.

Comments:

Primary Pile # 425
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/21/93	2	DHD130A	170		11.50		14.78		09/21/93			45.5	39.7	14.6%

Total Drill Time = 11.50 Hours
Average Penetration Rate = 14.78 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5.28° S X 3.52° E
S-ARC North = 17.71
S-ARC South = 28.56

Quality Coring: None.

Comments:

Secondary Pile # 426
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Theoretical Volume (CU.YD.)
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
06/24/93	1	DHD130A	60		4.00		15.00		14.0
07/17/93	1	DHD130A	170	60	12.87	4.47	8.55	13.42	39.7

Total Drill Time = 16.87 Hours
Average Penetration Rate = 10.08 Feet / Hour

Total Redrill Time = 4.47 Hours
Average Penetration Rate = 13.42 Feet / Hour

Vertically Information
At Full Depth = 3.92' S X 1.96" E
S-ARC North = 28.56
S-ARC South = 31.50

Quality Coring: None.

Comments: Large cavity 56 - 65' took 32 cubic yds of concrete to fill.

Primary Pile # 427
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Theoretical Volume (CU.YD.)
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
09/17/93	2	DHD130A	170		11.25		15.11		46

Total Drill Time = 11.25 Hours
Average Penetration Rate = 15.11 Feet / Hour

Total Redrill Time = None

Vertically Information
At Full Depth = 0' N/S X 1.76" W
S-ARC North = 31.50
S-ARC South = 28.13

Quality Coring: None.

Comments:

Secondary Pile # 428
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/12/93	1	DHD130A	75		2.50		30.00		07/12/93		36		17.5	105.6%
07/26/93	1	DHD130A	170	75	7.26	3.92	13.09	19.13	07/27/93			46	39.7	15.9%

Total Drill Time = 9.76 Hours
Average Penetration Rate = 17.42 Feet / Hour

Total Redrill Time = 3.92 Hours
Average Penetration Rate = 19.13 Feet / Hour

Verticality Information
At Full Depth = 1" N X .75" W
S-ARC North = 28.13
S-ARC South = 25.29

Quality Coring: None.

Comments:

Primary Pile # 429
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/07/93	2	DHD130A		170		10.00		17.00	09/07/93			46	39.7	15.9%

Total Drill Time = 10.00 Hours
Average Penetration Rate = 17.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 0" E/W
S-ARC North = 25.29
S-ARC South = 28.16

Quality Coring: None.

Comments:

Secondary Pile # 430
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
03/02/93	1	DHD130A	30		2.75			10.91		03/03/93		7		7.0	-0.1%	
03/10/93	1	DHD130A	65	30	1.00	0.41	35.00	73.17		03/10/93		21		15.2	38.4%	
07/23/93	1	DHD130A	86	65	2.50	3.00	8.40	21.67		07/24/93		71.5		20.1	256.0%	
07/29/93	1	DHD130A	170	86	1.58	4.75	53.16	18.11		07/30/93			45	39.7	13.4%	

Total Drill Time = 7.83 Hours
Average Penetration Rate = 21.71 Feet / Hour
Total Redrill Time = 8.16 Hours
Average Penetration Rate = 22.18 Feet / Hour

Verticality Information
At Full Depth = 1" N X 0" E/W
S-ARC North = 28.16
S-ARC South = 20.05

Quality Coring: 6" Joint core 430/431; 29.6' deep on 10/29/93.

Comments: Cavity at 86'; placed 71.5 cu. yds

Primary Pile # 431
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
09/08/93	2	DHD130A	170		10.08			16.87	09/09/93			46.5	39.7	17.1%		

Total Drill Time = 10.08 Hours
Average Penetration Rate = 16.87 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.25" S X 0" E/W
S-ARC North = 20.05
S-ARC South = 30.43

Quality Coring: None.

Comments:

Secondary Pile # 432
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/14/93	1	DHD130A	80		2.08		38.46		07/15/93		35.5		18.7	90.0%
07/28/93	1	DHD130A	170	80	8.66	4.09	10.39	19.56	07/28/93			48	39.7	20.9%

Total Drill Time = 10.74 Hours
Average Penetration Rate = 15.83 Feet / Hour

Total Redrill Time = 4.09 Hours
Average Penetration Rate = 19.56 Feet / Hour

Vertically Information
At Full Depth = .5" S X .5" E
S-ARC North = 30.43
S-ARC South = 24.57

Quality Coring: None.

Comments: Connected with pile 460

Primary Pile # 433
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/10/93	2	240	170		6.16		27.60		09/11/93			45	39.7	13.4%

Total Drill Time = 6.16 Hours
Average Penetration Rate = 27.60 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 2" S X .5" E
S-ARC North = 24.57
S-ARC South = 29.37

Quality Coring: None.

Comments:

Secondary Pile # 434
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/11/93	1	DHD130A	65		1.90		34.21		03/12/93	18			15.2	18.6%	
08/11/93	1	DHD130A	170	65	11.25	3.42	9.33	19.01	08/12/93			88	39.7	121.7%	

Total Drill Time = 13.15 Hours
Average Penetration Rate = 12.93 Feet / Hour

Total Redrill Time = 3.42 Hours
Average Penetration Rate = 19.01 Feet / Hour

Verticality Information
At Full Depth = 0' N/S X 1.5' W
S-ARC North = 29.37
S-ARC South = 6.23

Quality Coring: None.

Comments: DEFICIENT JOINT WIDTH AT FULL DEPTH, CORRECTED WITH CONFORMING PILE.
Connected with pile 472; Large cavity encountered.

Primary Pile # 435
Area "A"

Area A

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
09/15/93	2	DHD130A	171		9.08		18.83		09/15/93			44	39.9	10.2%	

Total Drill Time = 9.08 Hours
Average Penetration Rate = 18.83 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 6.54" S X 12.10" E
S-ARC North = 6.23
S-ARC South = 26.25

Quality Coring: None.

Comments:

Secondary Pile # 436
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/31/93	1	DHD130A	170		15.42		11.02		08/02/93			81	39.7	104.0%

Total Drill Time = 15.42 Hours
Average Penetration Rate = 11.02 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5.18" S X 3.11" E
S-ARC North = 26.25
S-ARC South = 18.36

Quality Coring: None.

Comments: Cavities 40 to 60' deep

Primary Pile # 437
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/30/93	2	DHD130A	170		10.51		16.18		08/30/93			51	39.7	28.5%

Total Drill Time = 10.51 Hours
Average Penetration Rate = 16.18 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 10.30" S X 1.5" E
S-ARC North = 18.36
S-ARC South = 31.90

Quality Coring: None.

Comments:

Secondary Pile # 438
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
08/09/93	1	DHD130A	171		12.41		13.78		
08/16/93	1	DHD130A	170	171		7.42	ERR		23.05
Total Drill Time = 12.41 Hours									
Average Penetration Rate = 13.70 Feet / Hour									
Total Redrill Time = 7.42 Hours									
Average Penetration Rate = 23.05 Feet / Hour									
Verticality Information									
At Full Depth = 5' S X 5.78' W									
S-ARC North = 31.90									
S-ARC South = 33.69									
Quality Coring: None.									
Comments: Connected with pile 470; Hole collapsed 50 feet.									

Total Drill Time = 12.41 Hours
Average Penetration Rate = 13.70 Feet / Hour
Total Redrill Time = 7.42 Hours
Average Penetration Rate = 23.05 Feet / Hour

Verticality Information
At Full Depth = 5' S X 5.78' W
S-ARC North = 31.90
S-ARC South = 33.69

Quality Coring: None.

Comments: Connected with pile 470; Hole collapsed 50 feet.

Primary Pile # 439
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date					Grout (CU.YD.)
08/23/93	1	DHD130A	170		10.42			16.31			46	39.7	15.9%	
										08/23/93				

Secondary Pile # 440
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/02/93	1	DHD130A	30		1.33			22.56	03/03/93		6		7.0	-14.4%
08/12/93	1	DHD130A	171	30	11.30	0.86		12.48	08/13/93			55	39.9	37.7%

Total Drill Time = 12.63 Hours
Average Penetration Rate = 13.54 Feet / Hour

Total Redrill Time = 0.86 Hours
Average Penetration Rate = 34.88 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 3° E
S-ARC North = 24.66
S-ARC South = 17.96

Quality Coring: None.

Comments:

Primary Pile # 441
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
08/18/93	1	DHD130A	170		9.08			18.72		08/18/93			49	39.7	23.4%

Total Drill Time = 9.08 Hours
Average Penetration Rate = 18.72 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5.28° S X .75° E
S-ARC North = 17.96
S-ARC South = 37.01

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Frig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/06/93	1	DHD130A	170		8.84		19.23		08/07/93			67	39.7	68.8%

Total Bedrill Time = None

Quality Coring: None.

Primary Pile # 443
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date (CU.YD.)	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/20/93	1	DHD130A		170		10.50		16.19	08/20/93			46	39.7	15.9%

Total Redrill Time =

Average Penetration Rate =

None

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
08/04/93	1	DHD 130A	170		9.42		18.05			08/04/93			59.5	39.7	49.9%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile # 445
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)						
08/17/93	1	DHD130A	170		10.67		15.93		08/18/93			47	39.7	18.4%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments: Connected with pile 408

Secondary Pile # 446
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/22/93	1	DHD130A	170		11.67		14.57		07/22/93			59	39.7	48.6%

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/15/93	1	DHD130A	170		11.50		14.78		07/16/93			69	39.7	73.8%

Total Redrill Time = None

Quality Coring: None.

Primary Pile # 449
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Spec. Concrete Volume (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
08/24/93	2	DHD130A	170		10.51		16.18		08/26/93			46.5	39.7	17.1%	

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Secondary Pile # 450
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date					Grout (CU.YD.)
03/02/93	1	DHD130A	50		1.33		37.59			11		11.7	-5.8%	
07/20/93	1	DHD130A	170	50	8.09	1.58	14.83	31.65				51.5	29.7%	

Total Drill Time = 9.42 Hours
Average Penetration Rate = 18.05 Feet / Hour

Total Redrill Time = 1.58 Hours
Average Penetration Rate = 31.65 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 27.45
S-ARC South = 29.39

Quality Coring: None.

Comments:

Primary Pile # 451
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date					Grout (CU.YD.)
09/20/93	2	DHD130A		170		8.59		19.79			46	39.7	15.9%	

Total Drill Time = 8.59 Hours
Average Penetration Rate = 19.79 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.77° N X 6° W
S-ARC North = 29.39
S-ARC South = 29.48

Quality Coring: None.

Comments: Connected with pile 425

Secondary Pile # 452
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
07/06/93	1	DHD130A	170		11.33		15.00			07/07/93			64	39.7	61.2%

Total Drill Time = 11.33 Hours
Average Penetration Rate = 15.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4.78" N X 6.79" W
S-ARC North = 29.48
S-ARC South = 22.83

Quality Coring: None.

Comments:

Primary Pile # 453
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/13/93	2	240	170		5.33		31.89		09/14/93			47	39.7	18.4%

Total Drill Time = 5.33 Hours
Average Penetration Rate = 31.89 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.5" N X 2.5" W
S-ARC North = 22.83
S-ARC South = 23.96

Quality Coring: None.

Comments:

Secondary Pile # 454

Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/04/93	1	DHD130A	60		3.33		18.02		03/05/93		21		14.0	49.9%
07/13/93	1	DHD130A	170	60	4.32	3.33	25.46	18.02	07/13/93			50	39.7	26.0%

Total Drill Time = 7.65 Hours
Average Penetration Rate = 22.22 Feet / Hour
Total Redrill Time = 3.33 Hours
Average Penetration Rate = 18.02 Feet / Hour

Verticality Information
At Full Depth = 1" N X 2" E
S-ARC North = 23.96
S-ARC South = 25.24

Quality Coring: None.

Comments:

Primary Pile # 455

Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
09/11/93	2	240	171		5.33			32.08		09/11/93			45	39.9	12.7%

Total Drill Time = 5.33 Hours
Average Penetration Rate = 32.08 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X .5" E
S-ARC North = 25.24
S-ARC South = 28.13

Quality Coring: None.

Comments: Connected with pile 485

Secondary Pile # 456
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date
07/09/93	1	DHD130A	171		12.59		13.58		07/09/93
									Spec. Concrete (CU.YD.)
									Non-Spec. Concrete (CU.YD.)
									GROUT (CU.YD.)
									Theoretical Volume (CU.YD.)
									Overbreak
									39.9
									55.5
									39.0%

Total Drill Time = 12.59 Hours
Average Penetration Rate = 13.58 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" N X 1.25" E
S-ARC North = 28.13
S-ARC South = 12.79

Quality Coring: None.

Comments:

Primary Pile # 457
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date
09/17/93	2	DHD130A	170		10.09		16.85		09/17/93
									Spec. Concrete (CU.YD.)
									Non-Spec. Concrete (CU.YD.)
									GROUT (CU.YD.)
									Theoretical Volume (CU.YD.)
									Overbreak
									39.7
									44
									10.8%

Total Drill Time = 10.09 Hours
Average Penetration Rate = 16.85 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 6.54" S X 1" W
S-ARC North = 12.79
S-ARC South = 34.77

Quality Coring: None.

Comments:

Secondary Pile # 458
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/10/93	1	DHD130A	170		13.91		12.22		07/12/93			52	38.7	31.0%

Total Drill Time = 13.91 Hours
Average Penetration Rate = 12.22 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 2° E
S-ARC North = 34.77
S-ARC South = 29.30

Quality Coring: None.

Comments:

Primary Pile # 459
Area "A"

CUT-OFF WALL EXCAVATION														CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak				
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)										
09/07/93	2	DHD130A	170		8.00		21.25		09/08/93			47	39.7	18.4%				

Total Drill Time = 8.00 Hours
Average Penetration Rate = 21.25 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2° N X 4.53° E
S-ARC North = 29.30
S-ARC South = 25.55

Quality Coring: None.

Comments:

Secondary Pile # 460
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/02/93	1	DHD130A	45		1.50		30.00			03/03/93		11		10.5	4.7%
03/10/93	1	DHD130A	55	45	1.00	0.91	10.00	49.45		03/10/93		18		12.8	40.1%
07/14/93	1	DHD130A	170	55	10.25	2.25	11.22	24.44		07/14/93			46	39.7	15.9%

Total Drill Time = 12.75 Hours
Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = 3.16 Hours
Average Penetration Rate = 31.65 Feet / Hour

Verticality Information
At Full Depth = 1.27" N X 2.29" E
S--ARC North = 25.55
S--ARC South = 24.76

Quality Coring: None.

Comments: Connected with pile 432

Primary Pile # 461
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
09/09/93	2	DHD130A	170		10.25		16.59		09/10/93			46.5	39.7	17.1%	

Total Drill Time = 10.25 Hours
Average Penetration Rate = 16.59 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N X 0" EW
S--ARC North = 24.76
S--ARC South = 24.56

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/26/93	1	DHD130A	170		12.17		13.97		07/26/93			52	39.7	31.0%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile # 463
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
09/22/93	2	DHD130A	170		9.83			17.29	09/22/93			45	39.7	13.4%	

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Secondary Pile # 464
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/27/93	1	DHD130A	170		13.83		12.29		07/28/93			53.5	39.7	34.8%

Total Drill Time = 13.83 Hours
Average Penetration Rate = 12.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5.57" S X 3.54" E
S-ARC North = 17.51
S-ARC South = 34.39

Quality Coring: None.

Comments: Cavity 41 - 52'

Primary Pile # 465
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/27/93	2	DHD130A	170		10.58			16.07	09/27/93			45	39.7	13.4%

Total Drill Time = 10.58 Hours
Average Penetration Rate = 16.07 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5" N X 1.5" E
S-ARC North = 34.39
S-ARC South = 22.38

Quality Coring: None.

Comments:

Secondary Pile # 466
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/29/93	1	DHD130A	170		10.58		16.07		07/29/93			54	39.7	36.0%

Total Drill Time = 10.58 Hours
Average Penetration Rate = 16.07 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.32" S X .52" W
S-ARC North = 22.38
S-ARC South = 27.13

Quality Coring: None.

Comments:

Primary Pile # 467
Area "A"

Area A

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/05/93	2	DHD 130A	170		11.25		15.11		10/06/93			47	39.7	18.4%

Total Drill Time = 11.25 Hours
Average Penetration Rate = 15.11 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2" S X 1" E
S-ARC North = 27.13
S-ARC South = 24.83

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Fig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/07/93	1	DHD130A	171		11.00		15.55		08/09/93			69.5	39.9	74.0%

At Full Depth =	1" N X 2" E
S - ARC North =	29.44
S - ARC South =	26.27

Primary Pile # 471
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment	Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
				Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)					
10/01/93		2	DHD130A		170		12.41		13.70		46	39.7	15.9%	

Vertically Information

At Full Depth =	.75° N X 0° E/W
S-ARC North =	26.27
S-ARC South =	22.94

Comments: See pile 470

Secondary Pile # 472
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/10/93	1	DHD130A	64		3.91		16.37		08/11/93		43.5		14.9	191.1%
10/07/93	2	DHD130A	170	64	6.75	3.67	15.70	17.44	10/07/93			45	39.7	13.4%

Total Drill Time = 10.66 Hours
Average Penetration Rate = 15.95 Feet / Hour

Total Redrill Time = 3.67 Hours
Average Penetration Rate = 17.44 Feet / Hour

Verticality Information
At Full Depth = 1.75" S X 1.5" E
S-ARC North = 22.94
S-ARC South = 29.04

Quality Coring: None.

Comments:

Primary Pile # 473
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
08/21/93	1	DHD130A	63		3.00			21.00		08/22/93		32		14.7	117.5%
09/30/93	2	DHD130A	170	63	9.83	4.33		10.89	14.55	09/30/93			55.5	39.7	39.8%

Total Drill Time = 12.83 Hours
Average Penetration Rate = 13.25 Feet / Hour

Total Redrill Time = 4.33 Hours
Average Penetration Rate = 14.55 Feet / Hour

Verticality Information
At Full Depth = 0" N/S X 3.58" E
S-ARC North = 29.04
S-ARC South = 26.69

Quality Coring: None.

Comments: Cavity at 62'

Secondary Pile # 474
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
08/16/93	1	DHD130A	60		2.43		24.69		08/17/93		19.5		14.0	39.2%		
10/11/93	2	DHD130A	170	60	7.41	3.50	14.84	17.14	10/11/93			45	39.7	13.4%		

Total Drill Time = 9.84 Hours
Average Penetration Rate = 17.28 Feet / Hour
Total Redrill Time = 3.50 Hours
Average Penetration Rate = 17.14 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 2° E
S-ARC North = 26.69
S-ARC South = 26.05

Quality Coring: None.

Comments: Cavity

Primary Pile # 475
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
09/28/93	2	DHD130A	170		13.25		12.83		09/28/93			48	39.7	20.9%		

Total Drill Time = 13.25 Hours
Average Penetration Rate = 12.83 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5° S X 2.26° E
S-ARC North = 26.05
S-ARC South = 26.02

Quality Coring: None.

Comments:

Secondary Pile # 476
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Theoretical Volume (CU.YD.)
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
08/19/93	1	DHD130A	78		2.92		26.71		18.2
10/05/93	2	DHD130A	170	78	6.08	4.83	15.13	16.15	39.7

Total Drill Time = 9.00 Hours
Average Penetration Rate = 18.89 Feet / Hour

Total Redrill Time = 4.83 Hours
Average Penetration Rate = 16.15 Feet / Hour

Vertically Information
At Full Depth = 1" S X 3" E
S-ARC North = 26.02
S-ARC South = 23.72

Quality Coring: None.

Comments:

Primary Pile # 477
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Theoretical Volume (CU.YD.)
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
09/24/93	2	DHD130A	170		11.67		14.57		49

Total Drill Time = 11.67 Hours
Average Penetration Rate = 14.57 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 3" S X 4.53" E
S-ARC North = 23.72
S-ARC South = 29.30

Quality Coring: None.

Comments: Part of vertically device lost in hole.

Secondary Pile # 478
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
08/17/93	1	DHD130A	62		1.83		33.88		
10/02/93	2	DHD130A	170	62	7.50	4.17	14.40		14.87
Total Drill Time = 9.33 Hours									
Average Penetration Rate = 18.22 Feet / Hour									
Total Redrill Time = 4.17 Hours									
Average Penetration Rate = 14.87 Feet / Hour									
Verticality Information									
At Full Depth = 1" S X 2" E									
S-ARC North = 29.30									
S-ARC South = 26.72									
Quality Coring: None.									
Comments: Cavity at 62'									

Primary Pile # 479
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
09/20/93	2	DHD130A	175		14.92		11.73		
Total Drill Time = 14.92 Hours									
Average Penetration Rate = 11.73 Feet / Hour									
Total Redrill Time = None									
Average Penetration Rate = None									
Verticality Information									
At Full Depth = 1" S X 3.27" E									
S-ARC North = 26.72									
S-ARC South = 19.10									
Quality Coring: None.									
Comments: Deep cavity at 165'-168', other cavities also in pile.									

Secondary Pile # 480
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/05/93	1	DHD130A	59		1.83		32.24		08/06/93		34		13.8	146.8%
10/06/93	2	DHD130A	170	59	6.83	3.60	16.25	16.39	11/03/93			45	39.7	13.4%

Total Drill Time = 8.66 Hours
Average Penetration Rate = 19.63 Feet / Hour

Total Redrill Time = 3.60 Hours
Average Penetration Rate = 16.39 Feet / Hour

Verticality Information
At Full Depth = 5.6" S X 0" E/W
S-ARC North = 19.10
S-ARC South = 30.82

Quality Coring: None.

Comments: Lost bit in hole; Cavity at 60' deep

Primary Pile # 481
Area "A"

Area A

CUT-OFF WALL EXCAVATION														CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak				
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)										
09/16/93	2	DHD130A	170		10.67		15.93		09/17/93			48	39.7	20.9%				

Total Drill Time = 10.67 Hours
Average Penetration Rate = 15.93 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.5" S X 1.5" W
S-ARC North = 30.82
S-ARC South = 39.35

Quality Coring: None.

Comments:

Secondary Pile # 482
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
08/13/93	1	DHD130A	74		3.83		19.32		108.3%
11/09/93	1	DHD130A	170	74	4.83	1.42	19.88	52.11	5.8%

Total Drill Time = 8.66 Hours
Average Penetration Rate = 19.63 Feet / Hour
Total Redrill Time = 1.42 Hours
Average Penetration Rate = 52.11 Feet / Hour

Verticality Information
At Full Depth = 8.5" N X 2.76" E
S-ARC North = 39.35
S-ARC South = 11.83

Quality Coring: None.

Comments:

Primary Pile # 483
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
09/15/93	2	DHD130A	170		11.25		15.11		38.5%

Total Drill Time = 11.25 Hours
Average Penetration Rate = 15.11 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" N X 5" W
S-ARC North = 11.83
S-ARC South = 18.63

Quality Coring: None.

Comments:

Secondary Pile # 484
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date
08/11/93	1	DHD130A	72		1.83		39.34		08/12/93
10/26/93	2	DHD130A	170	72	4.50	3.33	21.78	21.62	10/26/93
Total Drill Time = 6.33 Hours									
Average Penetration Rate = 26.86 Feet / Hour									
Total Redrill Time = 3.33 Hours									
Average Penetration Rate = 21.62 Feet / Hour									
Verticality Information									
At Full Depth = 3.5" S X 5.5" W									
S-ARC North = 18.63									
S-ARC South = 30.18									
Quality Coring: None.									
Comments:									

Total Drill Time = 6.33 Hours
Average Penetration Rate = 26.86 Feet / Hour

Total Redrill Time = 3.33 Hours
Average Penetration Rate = 21.62 Feet / Hour

Verticality Information
At Full Depth = 3.5" S X 5.5" W
S-ARC North = 18.63
S-ARC South = 30.18

Quality Coring: None.

Comments:

Primary Pile # 485
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date
09/13/93	2	240	172		8.25		20.85		09/14/93
Total Drill Time = 8.25 Hours									
Average Penetration Rate = 20.85 Feet / Hour									
Total Redrill Time = None									
Average Penetration Rate = None									
Verticality Information									
At Full Depth = .25" S X 0" EW									
S-ARC North = 30.18									
S-ARC South = 32.22									
Quality Coring: None.									
Comments: Connected with pile 455; cavity 49-65'									

Total Drill Time = 8.25 Hours
Average Penetration Rate = 20.85 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .25" S X 0" EW
S-ARC North = 30.18
S-ARC South = 32.22

Quality Coring: None.

Comments: Connected with pile 455; cavity 49-65'

Secondary Pile # 486
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/21/93	1	DHD130A	72		2.33		30.90		07/22/93		42		16.8	149.8%
10/19/93	1	DHD130A	170	72	5.50	2.67	17.82	26.97	10/20/93			48	39.7	20.9%

Total Drill Time = 7.83 Hours
Average Penetration Rate = 21.71 Feet / Hour

Total Redrill Time = 2.67 Hours
Average Penetration Rate = 26.97 Feet / Hour

Verticality Information
At Full Depth = 4" N X 2" E
S-ARC North = 32.22
S-ARC South = 21.23

Quality Coring: None.

Comments:

Primary Pile # 487
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/10/93	2	DHD130A	170		10.58		16.07		09/10/93			76	39.7	91.4%

Total Drill Time = 10.58 Hours
Average Penetration Rate = 16.07 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5" N X 0" E/W
S-ARC North = 21.23
S-ARC South = 28.68

Quality Coring: None.

Comments: Cavity 50-70' deep

Secondary Pile # 488
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/16/93	1	DHD130A	60		1.30		46.15		07/16/93		27		14.0	92.7%
08/03/93	1	DHD130A	75	60	8.03	2.30	1.87	26.09	08/03/93		24		17.5	37.0%
10/22/93	2	DHD130A	170	75	6.33	3.50	15.01	21.43	10/23/93			43	39.7	8.3%

Total Drill Time = 15.66 Hours
Average Penetration Rate = 10.96 Feet / Hour

Total Redrill Time = 5.80 Hours
Average Penetration Rate = 23.28 Feet / Hour

Verticality Information
At Full Depth = 2" N X 2.26" E
S--ARC North = 28.68
S--ARC South = 31.00

Quality Coring: None.

Comments: Cavity at 63'

Primary Pile # 489
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/27/93	2	DHD130A	183.5		19.74		9.30		08/28/93			117	42.9	173.0%

Total Drill Time = 19.74 Hours
Average Penetration Rate = 9.30 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5.21" N X 3.13" E
S--ARC North = 31.00
S--ARC South = No Overlap at Full Depth, Connected with Conforming Pile.

Quality Coring: None.

Comments: Used 489/490 conforming pile for sump. Lost air in hole at 157'.

Secondary Pile # 490
Area "A"

Area 'A'

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/12/93	1	DHD130A	57		1.67		34.13		07/12/93		23		13.3	72.8%
07/19/93	1	DHD130A	69	57	2.05	3.00	5.85	19.00	07/19/93		36		16.1	123.4%
10/30/93	2	DHD130A	170	69	10.33	3.50	9.78	19.71	10/30/93			44	39.7	10.8%

Total Drill Time = 14.05 Hours
Average Penetration Rate = 12.10 Feet / Hour
Total Redrill Time = 6.50 Hours
Average Penetration Rate = 19.38 Feet / Hour

Verticality Information
At Full Depth = 5.53° S X 3.52° E
S-ARC North = No Overlap at Full Depth, Connected With conforming Pile.
S-ARC South = 23.51

Quality Coring: None.

Comments: Cavity at 69'

Primary Pile # 491
Area "A"

Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/08/93	2	240	170		5.50		30.91		09/08/93			45	39.7	13.4%

Total Drill Time = 5.50 Hours
Average Penetration Rate = 30.91 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 7.72° S X 3.09° E
S-ARC North = 23.51
S-ARC South = 37.83

Quality Coring: None.

Comments:

Secondary Pile # 492
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/06/93	1	DHD130A	90		6.75		13.33		07/07/93		49.5		21.0	135.5%
07/15/93	1	DHD130A	170	90	5.92	4.75	13.51	18.95	07/15/93			48	39.7	20.9%

Total Drill Time = 12.67 Hours
Average Penetration Rate = 13.42 Feet / Hour

Total Redrill Time = 4.75 Hours
Average Penetration Rate = 18.95 Feet / Hour

Verticality Information
At Full Depth = 1.26° N X 2.28° E
S--ARC North = 37.83
S--ARC South = 28.50

Quality Coring: None.

Comments:

Primary Pile # 493
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/09/93	2	DHD130A	170		11.42		14.89		10/09/93			45	39.7	13.4%

Total Drill Time = 11.42 Hours
Average Penetration Rate = 14.89 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.52° N X 2° E
S--ARC North = 28.50
S--ARC South = 21.32

Quality Coring: None.

Comments:

Secondary Pile # 494
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/09/93	1	DHD130A	170		14.25		11.93		07/10/93			53.5	39.7	34.8%

Total Drill Time = 14.25 Hours
Average Penetration Rate = 11.93 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X 2.75" E
S-ARC North = 21.32
S-ARC South = 24.89

Quality Coring: None.

Comments:

Primary Pile # 495
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/25/93	2	XL-24	170		6.33		26.86		10/25/93			47.5	39.7	19.7%

Total Drill Time = 6.33 Hours
Average Penetration Rate = 26.86 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2" S X 1" W
S-ARC North = 24.89
S-ARC South = 19.98

Quality Coring: None.

Comments:

Secondary Pile # 496
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
07/13/93	1	DHD130A	59		2.25		26.22			07/13/93		23		13.8	66.9%
07/24/93	1	DHD130A	170	59	9.67	2.50	11.48		23.60	07/24/93		86		39.7	116.6%
08/20/93	1	DHD130A	170	170		5.66			30.04	08/21/93			47	39.7	18.4%

Total Drill Time = 11.92 Hours
Average Penetration Rate = 14.26 Feet / Hour

Total Redrill Time = 8.16 Hours
Average Penetration Rate = 28.06 Feet / Hour

Verticality Information
At Full Depth = 6.29° S X 0° E/W
S-ARC North = 19.98
S-ARC South = 30.92

Quality Coring: None.

Comments: Cavity at 59'; Hole collapsed.

Primary Pile # 497
Area "B"

Area D

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak			
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
12/02/93	2	XL-24	170		4.92		34.55			57.5	39.7	44.8%			

Total Drill Time = 4.92 Hours
Average Penetration Rate = 34.55 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.18° S X 0° E/W
S-ARC North = 30.92
S-ARC South = 21.99

Quality Coring: None.

Comments: Numerous air connection from pile 550 to 600

Secondary Pile # 498
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/16/93	1	DHD130A	70		3.17		22.08		08/17/93		38		16.3	132.5%
10/27/93	2	240	74	70	0.33	2.25	12.12	31.11	10/28/93		63		17.3	264.6%
12/11/93	2	XL-24	170	74	3.25	2.67	29.54	27.72	12/11/93			47	39.7	18.4%

Total Drill Time = 6.75 Hours
Average Penetration Rate = 25.19 Feet / Hour

Total Redrill Time = 4.92 Hours
Average Penetration Rate = 29.27 Feet / Hour

Verticality Information
At Full Depth = 6.26" S X 1.5" E
S-ARC North = 21.99
S-ARC South = 33.15

Quality Coring: None.

Comments: Cavity 50'-70' deep

Primary Pile # 499
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
12/07/93	2	DHD130A	170		16.33			10.41	12/08/93			95	39.7	139.3%

Total Drill Time = 16.33 Hours
Average Penetration Rate = 10.41 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X 2" W
S-ARC North = 33.15
S-ARC South = 24.71

Quality Coring: None.

Comments:

Secondary Pile #500
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
10/20/93	1	XL-24	46		0.83		55.42		10/21/93		37		10.7	244.4%	
11/05/93	1	DHD130A	78	46	1.67	5.50	19.16	8.36	11/06/93		34		18.2	86.7%	
01/06/94	2	DHD130A	186	78	9.34	4.75	11.56	16.42	01/06/94			49.5	43.4	14.0%	

Total Drill Time = 11.84 Hours
Average Penetration Rate = 15.71 Feet / Hour
Total Redrill Time = 10.25 Hours
Average Penetration Rate = 12.10 Feet / Hour

Verticality Information
At Full Depth = 2.5" South X 0" East / West
S-ARC North = 26.52"
S-ARC South = 31.71"

Quality Coring: None.

Comments:

Primary Pile #501
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
12/14/93	2	XL-24	185		8.33		22.21		12/15/93			53	43.2	22.7%	

Total Drill Time = 8.33 Hours
Average Penetration Rate = 22.21 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.25" North X 1.0" West
S-ARC North = 31.71"
S-ARC South = 29.92"

Quality Coring: None.

Comments:

Secondary Pile #502
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/02/93	2	DHD130A	66		2.00		33.00		11/02/93		39		15.4	153.0%
01/11/94	1	DHD130A	185	66	7.42	3.07	16.04	21.50	01/12/94			51	43.2	18.1%

Total Drill Time = 9.42 Hours
Average Penetration Rate = 19.64 Feet / Hour

Total Redrill Time = 3.07 Hours
Average Penetration Rate = 21.50 Feet / Hour

Verticality Information

At Full Depth = 3.5" North X 1.0" West
S-ARC North = 29.92"
S-ARC South = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.

Quality Coring: None.

Comments:

Primary Pile #503
Area "B"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
11/08/93	1	DHD130A	83		3.92			21.17		11/30/93		45		19.4	132.2%
05/18/93	2	XL-24	185	83	3.66	3.50	27.87	23.71		05/19/94			48	43.2	11.1%

Total Drill Time = 7.58 Hours
Average Penetration Rate = 24.41 Feet / Hour

Total Redrill Time = 3.50 Hours
Average Penetration Rate = 23.71 Feet / Hour

Verticality Information

At Full Depth = 10.5" North X 6.0" West
S-ARC North = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.
S-ARC South = 31.38"

Quality Coring: None.

Comments:

Secondary Pile #504
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/04/93	1	DHD130A	64		1.58		40.51		11/04/93		28.5		14.9	90.7%
05/04/94	1	DHD130A	185	64	8.21	3.12	14.74	20.51	05/04/94			47	43.2	8.8%

Total Drill Time = 9.79 Hours
Average Penetration Rate = 18.90 Feet / Hour

Total Redrill Time = 3.12 Hours
Average Penetration Rate = 20.51 Feet / Hour

Verticality Information
At Full Depth = 7.0" South X 5.5" West
S-ARC North = 31.38"
S-ARC South = 36.40"

Quality Coring: None.

Comments:

Primary Pile #505
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/11/94	2	DHD130A	80		4.50		17.78		04/11/94	32.5			18.7	74.0%
06/14/94	1	DHD130A	185	80	5.25	2.00	20.00	40.00	06/15/94			47	43.2	8.8%

Total Drill Time = 9.75 Hours
Average Penetration Rate = 18.97 Feet / Hour

Total Redrill Time = 2.00 Hours
Average Penetration Rate = 40.00 Feet / Hour

Verticality Information
At Full Depth = 1.0" North X 2.25" West
S-ARC North = 36.40"
S-ARC South = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.

Quality Coring: None.

Comments:

Secondary Pile #506
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
01/13/94	2	DHD130A	74		4.75		15.58		01/31/94	12				17.3	-30.6%
02/11/94	2	XL-24	135	74	2.35	1.40	25.96	52.86	02/18/94	86	16			31.5	223.6%
04/20/94	1	DHD130A	185	135	6.00	4.59	8.33	29.41	04/20/94			48		43.2	11.1%

Total Drill Time = 13.10 Hours
Average Penetration Rate = 14.12 Feet / Hour
Total Redrill Time = 5.99 Hours
Average Penetration Rate = 34.89 Feet / Hour

Verticality Information
At Full Depth = 14.8" South X 9.25" West
S-ARC North = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.
S-ARC South = 38.51"

Quality Coring: None.

Comments:

On 1/31/94 12 cu.yds. of grout was placed in Pile #506 before grout pump broke down

Primary Pile #507
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/06/94	2	DHD130A	107		3.75		28.53		04/06/94	35	1		25.0	44.1%
06/20/94	1	XL-24	185	107	2.92	2.58	26.71	41.47	06/21/94			47	43.2	8.8%

Total Drill Time = 6.67 Hours
Average Penetration Rate = 27.74 Feet / Hour
Total Redrill Time = 2.58 Hours
Average Penetration Rate = 41.47 Feet / Hour

Verticality Information
At Full Depth = 5.0" South X 6.75" West
S-ARC North = 38.51"
S-ARC South = 21.73"

Quality Coring: None.

Comments:

Secondary Pile #508
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/18/94	2	DHD130A	66		2.92		22.60		03/18/94	45			15.4	192.0%
04/30/94	1	DHD130A	185	66	7.25	1.68	16.41	39.29	05/02/94			48	43.2	11.1%

Total Drill Time = 10.17 Hours
Average Penetration Rate = 18.19 Feet / Hour
Total Redrill Time = 1.68 Hours
Average Penetration Rate = 39.29 Feet / Hour

Verticality Information
At Full Depth = 8.25" South X 5.25" West
S-ARC North = 21.73"
S-ARC South = 27.80"

Quality Coring: None.

Comments:

Primary Pile #509
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/12/94	2	DHD130A	85		3.67		23.16		04/13/94	40			19.8	101.5%
07/01/94	1	XL-24	185	85	3.58	2.17	27.93	39.17	07/05/94			48	43.2	11.1%

Total Drill Time = 7.25 Hours
Average Penetration Rate = 25.52 Feet / Hour
Total Redrill Time = 2.17 Hours
Average Penetration Rate = 39.17 Feet / Hour

Verticality Information
At Full Depth = 6.5" South X 1.5" East
S-ARC North = 27.80"
S-ARC South = 19.40"

Quality Coring: None.

Comments:

Secondary Pile #510
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date
03/21/94	2	DHD130A	65		1.50		43.33		03/22/94
05/05/94	1	XL-24	185	65	4.17	1.08	28.78	60.19	05/05/94

Total Drill Time = 5.67 Hours
Average Penetration Rate = 32.63 Feet / Hour

Total Redrill Time = 1.08 Hours
Average Penetration Rate = 60.19 Feet / Hour

Verticality Information
At Full Depth = 11" South X 1.0" West
S-ARC North = 19.40"
S-ARC South = 42.21"

Quality Coring: None.

Comments:

Primary Pile #511
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date
04/14/94	2	DHD130A	109		4.25		25.65		04/15/94
06/28/94	1	XL-24	185	109	2.67	2.91	28.46	37.46	06/29/94

Total Drill Time = 6.92 Hours
Average Penetration Rate = 26.73 Feet / Hour

Total Redrill Time = 2.91 Hours
Average Penetration Rate = 37.46 Feet / Hour

Verticality Information
At Full Depth = 2.0" North X 0.5" West
S-ARC North = 42.21"
S-ARC South = 36.77"

Quality Coring: None.

Comments:

Secondary Pile #512
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
03/24/94	2	DHD130A	62		1.67		37.13		
05/11/94	1	XL-24	185	62	5.09	1.00	24.17		62.00
Total Drill Time = 6.76 Hours									
Average Penetration Rate = 27.37 Feet / Hour									
Total Redrill Time = 1.00 Hours									
Average Penetration Rate = 62.00 Feet / Hour									
Vertically Information									
At Full Depth = 11" North X 5.0" East									
S-ARC North = 36.77"									
S-ARC South = 7.77"									
Quality Coring: None.									
Comments:									

Total Drill Time = 6.76 Hours
Average Penetration Rate = 27.37 Feet / Hour
Total Redrill Time = 1.00 Hours
Average Penetration Rate = 62.00 Feet / Hour

Vertically Information
At Full Depth = 11" North X 5.0" East
S-ARC North = 36.77"
S-ARC South = 7.77"

Quality Coring: None.

Comments:

Primary Pile #513
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
04/08/94	2	DHD130A	84		4.43		18.96		
06/06/94	1	DHD130A	185	84	8.33	3.33	12.12		25.23
Total Drill Time = 12.76 Hours									
Average Penetration Rate = 14.50 Feet / Hour									
Total Redrill Time = 3.33 Hours									
Average Penetration Rate = 25.23 Feet / Hour									
Vertically Information									
At Full Depth = 2.75" North X 2.25" West									
S-ARC North = 7.77"									
S-ARC South = 24.94"									
Quality Coring: None.									
Comments:									

Total Drill Time = 12.76 Hours
Average Penetration Rate = 14.50 Feet / Hour
Total Redrill Time = 3.33 Hours
Average Penetration Rate = 25.23 Feet / Hour

Vertically Information
At Full Depth = 2.75" North X 2.25" West
S-ARC North = 7.77"
S-ARC South = 24.94"

Quality Coring: None.

Comments:

Secondary Pile #514
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)		Redrill (FT)		Drill (HRS)	Redrill (HRS)							Drill (FT / HR)
03/23/94	1	DHD130A	63		1.08		58.33		03/23/94	20			14.7	35.9%	
05/13/94	2	DHD130A	95	63	1.67	2.50	19.16	25.20	05/16/94		27		22.2	21.7%	
07/20/94	2	DHD130A	185	95	8.10	6.83	11.11	13.91	07/21/94			47	43.2	8.8%	

Total Drill Time = 10.85 Hours
Average Penetration Rate = 17.05 Feet / Hour

Total Redrill Time = 9.33 Hours
Average Penetration Rate = 16.93 Feet / Hour

Verticality Information
At Full Depth = 2.0" North X 2.5" East
S--ARC North = 24.94"
S--ARC South = 13.84"

Quality Coring: None.
Comments:

Primary Pile #515
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/22/94	1	DHD130A	94		3.50		26.86		04/22/94	33	3.6		22.0	66.7%	
05/26/94	1	XL-24	185	94	3.67	1.83	24.80	51.37	05/27/94			48	43.2	11.1%	

Total Drill Time = 7.17 Hours
Average Penetration Rate = 25.80 Feet / Hour

Total Redrill Time = 1.83 Hours
Average Penetration Rate = 51.37 Feet / Hour

Verticality Information
At Full Depth = 3.0" South X 9.0" West
S--ARC North = 13.84"
S--ARC South = 29.51"

Quality Coring: None.
Comments:

Secondary Pile #516
Area "B"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/19/94	2	DHD130A	65		2.17		29.95			03/19/94	89			15.2	486.3%
05/16/94	2	DHD130A	110		2.50		18.00	1.83		05/17/94		33		25.7	28.5%
06/22/94	2	XL-24	185		4.46		16.82	1.04		06/23/94			47	43.2	8.8%

Total Drill Time = 9.13 Hours
Average Penetration Rate = 20.26 Feet / Hour

Total Redrill Time = 2.87 Hours
Average Penetration Rate = 60.98 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 2.5° West
S-ARC North = 29.51"
S-ARC South = 30.32"

Comments:

Primary Pile #517
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/19/94	1	DHD130A	120		8.08		14.85		04/19/94	48				28.0	71.3%
05/24/94	1	XL-24	185	120	2.33	2.92	27.90	41.10	05/25/94			47		43.2	8.8%

Total Drill Time = 10.41 Hours
Average Penetration Rate = 17.77 Feet / Hour

Total Redrill Time = 2.92 Hours
Average Penetration Rate = 41.10 Feet / Hour

Verticality Information
At Full Depth = 4.0° North X 5.0° East
S-ARC North = 30.32"
S-ARC South = 17.64"

Quality Coring: None.

Comments:

Secondary Pile #518
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
12/13/93	1	DHD130A	63		7.50		8.40		12/13/93		45.5		14.7	209.3%	
03/22/94	1	DHD130A	65	63	0.02	3.23	100.00	19.50	03/22/94	25			15.2	64.7%	
05/13/94	2	DHD130A	120	65	3.13	1.28	17.57	50.78	05/13/94		48		28.0	71.3%	
08/02/94	1	DHD130A	185	120	4.42	7.83	14.71	15.33	08/03/94			47	43.2	8.8%	

Total Drill Time = 15.07 Hours
Average Penetration Rate = 12.28 Feet / Hour
Total Redrill Time = 12.34 Hours
Average Penetration Rate = 20.10 Feet / Hour

Verticality Information
At Full Depth = 1.5" South X 5.5" East
S-ARC North = 17.64"
S-ARC South = 19.54"

Quality Coring: None.

Comments:

Primary Pile #519
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/31/94	1	DHD130A	117		5.83			20.07	03/31/94	48			27.3	75.7%
06/02/94	1	XL-24	185	117	2.70	2.89		25.19	06/03/94			50	43.2	15.7%

Total Drill Time = 8.53 Hours
Average Penetration Rate = 21.69 Feet / Hour
Total Redrill Time = 2.89 Hours
Average Penetration Rate = 40.48 Feet / Hour

Verticality Information
At Full Depth = 6.0" South X 7.0" East
S-ARC North = 19.54"
S-ARC South = 34.43"

Quality Coring: None.

Comments:

Secondary Pile # 520
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/19/93	1	XL-24	60		0.58		103.45		10/19/93		29		14.0	107.0%
11/06/93	1	DHD130A	75	60	0.84	5.25	17.86	11.43	11/06/93		32		17.5	82.7%
03/24/94	1	DHD130A	78	75	0.03	3.64	100.00	20.60	03/24/94	25	2		18.2	48.2%
05/17/94	2	DHD130A	115	78	2.51	2.33	14.74	33.48	05/18/94		31		26.9	15.4%
07/22/94	2	DHD130A	185	115	3.50	5.00	20.00	23.00	07/22/94			47	43.2	8.8%

Total Drill Time = 7.46 Hours
Average Penetration Rate = 24.80 Feet / Hour

Total Redrill Time = 16.22 Hours
Average Penetration Rate = 20.22 Feet / Hour

Verticality Information
At Full Depth = 1" North X 13" East
S--ARC North = 19.54
S--ARC South = 24.53

Quality Coring: None.

Comments:

Primary Pile # 521
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/16/94	2	DHD130A	87		4.41		19.73		04/18/94	25	1.5		20.3	30.4%
06/17/94	1	XL-24	185	87	3.84	1.58	25.52	55.06	06/17/94			47	43.2	8.8%

Total Drill Time = 8.25 Hours
Average Penetration Rate = 22.42 Feet / Hour

Total Redrill Time = 1.58 Hours
Average Penetration Rate = 55.06 Feet / Hour

Verticality Information
At Full Depth = 4" North X 1.5" West
S--ARC North = 34.43
S--ARC South = 15.43

Quality Coring: None.

Comments:

Secondary Pile # 522
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Redrill (HRS)	Penetration Rate		Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
09/17/94	1	DHD130A	64			1.17			54.70			10/13/93		23		14.9	53.9%		
04/02/94	1	DHD130A	63		63			5.17			12.19	04/02/94	29	2		14.7	110.7%		
05/31/94	1	DHD130A	115		64	2.00		1.08	25.50		59.26	06/01/94		31		26.9	15.4%		
08/05/94	2	DHD130A	185		115	5.97		6.08	11.73		18.91	08/08/94			47	43.2	8.8%		

Total Drill Time = 9.14 Hours
Average Penetration Rate = 20.24 Feet / Hour

Total Redrill Time = 12.33 Hours
Average Penetration Rate = 19.63 Feet / Hour

Verticality Information
At Full Depth = 2.5 South X 0° E/W
S-ARC North = 24.53
S-ARC South = 31.85

Quality Coring: None.

Comments: Connected with pile 552

Primary Pile # 523
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Redrill (HRS)	Penetration Rate		Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
04/13/94	2	DHD130A	115			6.33			18.17			04/13/94		1		26.9	30.3%		
06/14/94	1	XL-24	185		115	2.83		2.50	24.73		46.00	06/14/94			47	43.2	8.8%		

Total Drill Time = 9.16 Hours
Average Penetration Rate = 20.20 Feet / Hour

Total Redrill Time = 2.50 Hours
Average Penetration Rate = 46.00 Feet / Hour

Verticality Information
At Full Depth = 4" North X 10° east
S-ARC North = 15.43
S-ARC South = 35.59

Quality Coring: None.

Comments:

Secondary Pile # 524
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date
12/09/94	2	DHD130A	60		3.50		17.14		12/09/93
05/05/94	1	DHD130A	185	60	6.77	2.39	18.46	25.10	05/05/94

Total Drill Time = 10.27 Hours
Average Penetration Rate = 18.01 Feet / Hour

Total Redrill Time = 2.39 Hours
Average Penetration Rate = 25.10 Feet / Hour

Verticality Information
At Full Depth = 11" North X 10" east
S-ARC North = 31.85
S-ARC South = 17.24

Quality Coring: None.

Comments:

Primary Pile # 525
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date
03/28/94	1	DHD130A	97		5.00		19.40		03/29/94
06/28/94	1	XL-24	185	97	5.12	0.21	17.19	461.90	06/08/94

Total Drill Time = 10.12 Hours
Average Penetration Rate = 18.28 Feet / Hour

Total Redrill Time = 0.21 Hours
Average Penetration Rate = 461.90 Feet / Hour

Verticality Information
At Full Depth = 7" North X 0" E/W
S-ARC North = 35.59
S-ARC South = 21.81

Quality Coring: None.

Comments:

Secondary Pile # 526
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak				
03/17/94	2	DHD130A	63		1.83			34.43		03/15/94	58			14.7	294.2%				
04/21/94	1	DHD130A	185	63	8.83	3.00	13.82		21.00	04/21/94			50	43.2	15.7%				

Total Drill Time = 10.66 Hours
Average Penetration Rate = 17.35 Feet / Hour
Total Redrill Time = 3.00 Hours
Average Penetration Rate = 21.00 Feet / Hour

Verticality Information
At Full Depth = 3.77 North X 0° E/W
S--ARC North = 17.24
S--ARC South = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.

Quality Coring: None.

Comments:

Primary Pile # 527
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak				
04/06/94	1	DHD130A	83		3.17		26.18			04/06/94	40			19.4	106.4%				
07/07/94	2	DHD130A	185	83	9.16	4.67	11.14		17.77	07/08/94			48	43.2	11.1%				

Total Drill Time = 12.33 Hours
Average Penetration Rate = 15.00 Feet / Hour
Total Redrill Time = 4.67 Hours
Average Penetration Rate = 17.77 Feet / Hour

Verticality Information
At Full Depth = 5.5° South X 12.75° West
S--ARC North = 21.81
S--ARC South = 25.55

Quality Coring: None.

Comments:

Secondary Pile # 528
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout		Non-Spec. Concrete		Spec. Concrete		Theoretical Volume		Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)		(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)		
03/19/94	2	DHD130A	65		1.58			41.14	03/19/94	42						15.2		176.7%	
05/03/94	1	DHD130A	185		9.62		2.08	12.47	05/03/94					48		43.2		11.1%	

Total Drill Time = 11.20 Hours
Average Penetration Rate = 16.52 Feet / Hour

Total Redrill Time = 2.08 Hours
Average Penetration Rate = 31.25 Feet / Hour

Verticality Information
At Full Depth = 4.75 South X 4" West
S-ARC North =
S-ARC South = 32.92

Quality Coring: None.

Comments:

Primary Pile # 529
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout		Non-Spec. Concrete		Spec. Concrete		Theoretical Volume		Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)		(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)		
04/11/94	2	DHD130A	81		3.83			21.15	04/11/94	32						18.9		69.2%	
06/20/94	1	XL-24	185		3.58		2.08	29.05	06/21/94					47		43.2		8.8%	

Total Drill Time = 7.41 Hours
Average Penetration Rate = 24.97 Feet / Hour

Total Redrill Time = 2.08 Hours
Average Penetration Rate = 38.94 Feet / Hour

Verticality Information
At Full Depth = 0°N/S X 3" West
S-ARC North = 25.55
S-ARC South = 35.33

Quality Coring: None.

Comments:

Secondary Pile # 530
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete Volume (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/21/94	2	DHD130A	64	64	1.08		59.26		03/21/94	40			14.9	167.6%
05/09/94	1	XL-24	185	64	4.68	1.00	25.85	64.00	05/10/94			49	43.2	13.4%

Total Drill Time = 5.76 Hours
Average Penetration Rate = 32.12 Feet / Hour

Total Redrill Time = 1.00 Hours
Average Penetration Rate = 64.00 Feet / Hour

Verticality Information
At Full Depth = 8.25' North X 4" East
S-ARC North = 2.92
S-ARC South = No Overlap at Full Depth, Overlap Achieved with Conforming Pile

Quality Coring: None.

Comments:

Primary Pile # 531
Area "B"

Area D

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/08/94	2	DHD130A	85	85	3.92		21.68		04/08/94	100	2		19.8	413.9%	
05/07/94	1	DHD130A	185	85	6.92	4.67	14.45	18.20	06/07/94			47	43.2	8.8%	

Total Drill Time = 10.84 Hours
Average Penetration Rate = 17.07 Feet / Hour

Total Redrill Time = 4.67 Hours
Average Penetration Rate = 18.20 Feet / Hour

Verticality Information
At Full Depth = 2.5' South X 4" West
S-ARC North = 5.33
S-ARC South = 3.94

Quality Coring: None.

Comments:

Secondary Pile # 532
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/23/94	1	DHD130A	64		1.17		54.70		03/23/94	20			14.9	33.8%
05/16/94	2	DHD130A	85	64	1.35	3.06	15.56	20.92	05/16/94		24		19.8	20.9%
07/01/94	1	XL-24	185	85	2.75	2.67	36.36	31.84	07/05/94			48	43.2	11.1%

Total Drill Time = 5.27 Hours
Average Penetration Rate = 22.96 Feet / Hour

Total Redrill Time = 5.73 Hours
Average Penetration Rate = 26.00 Feet / Hour

Verticality Information
At Full Depth = 3.5" North X 8" West
S-ARC North =
S-ARC South = 28.15

Quality Coring: None.
Comments:

Primary Pile # 533
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/14/94	2	DHD130A	83		3.75		22.13		04/14/94	25	1		19.4	34.1%
05/27/94	1	XL-24	185	83	4.08	1.67	25.00	49.70	05/27/94			48	43.2	11.1%

Total Drill Time = 7.83 Hours
Average Penetration Rate = 13.03 Feet / Hour

Total Redrill Time = 1.67 Hours
Average Penetration Rate = 49.70 Feet / Hour

Verticality Information
At Full Depth = 5" North X 3.25" West
S-ARC North = 33.94
S-ARC South = 28.82

Quality Coring: None.
Comments:

Secondary Pile # 534
Area "B"

Area B

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/29/94	1	DHD130A	64		1.50		42.67		03/29/94	44	2		14.9	207.8%
05/16/94	1	DHD130A	95	64	1.70	2.80	18.24	22.86	05/17/94		27.5		22.2	24.0%
07/19/94	2	DHD130A	185	95	3.17	5.50	28.39	17.27	07/19/94			47	43.2	8.8%

Total Drill Time = 6.37 Hours
Average Penetration Rate = 19.00 Feet / Hour

Total Redrill Time = 8.30 Hours
Average Penetration Rate = 19.16 Feet / Hour

Verticality Information
At Full Depth = 6.5" North X 3.5" West
S-ARC North = 28.15
S-ARC South = 24.21

Quality Coring: None.

Comments:

Primary Pile # 535
Area "B"

Area 'B'

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/19/94	1	DHD130A	108		4.33		24.94			04/19/94	27	8		25.2	38.8%
05/24/94	1	XL-24	185	108	3.42	2.25	22.51	48.00		05/25/94			47	43.2	8.8%

Total Drill Time = 7.75 Hours
Average Penetration Rate = 9.94 Feet / Hour

Total Redrill Time = 2.25 Hours
Average Penetration Rate = 48.00 Feet / Hour

Verticality Information
At Full Depth = 5" North X 7" West
S-ARC North = 28.82
S-ARC South = 12.12

Quality Coring: None.

Comments:

Secondary Pile # 536
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/30/94	1	DHD130A	62		1.58		39.24		03/30/94	30			14.5	107.2%
05/11/94	2	DHD130A	100	62	1.87	2.21	20.32	28.05	05/13/94		32		23.4	37.0%
07/20/94	2	DHD130A	185	100	9.08	7.00	9.36	14.29	07/21/94			47	43.2	8.8%

Total Drill Time = 12.53 Hours
Average Penetration Rate = 9.82 Feet / Hour

Total Redrill Time = 9.21 Hours
Average Penetration Rate = 17.59 Feet / Hour

Verticality Information
At Full Depth = 1.75" South X 1.25" East
S-ARC North = 24.21
S-ARC South = 27.76

Quality Coring: None.

Comments: Contractor reported that an additional 35 cy of grout went into this hole, this grout however was used top to off several piles and is not included above.

Primary Pile # 537
Area "B"

Area D

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/27/94	1	DHD130A	94		4.33		21.71		04/28/94	30	7		22.0	68.6%	
06/02/94	1	XL-24	185	94	3.00	2.25	30.33	41.78	06/03/94			47	43.2	8.8%	

Total Drill Time = 7.33 Hours
Average Penetration Rate = 12.41 Feet / Hour

Total Redrill Time = 2.25 Hours
Average Penetration Rate = 41.78 Feet / Hour

Verticality Information
At Full Depth = 1" South X 0" E/W
S-ARC North = 12.12
S-ARC South = 30.80

Quality Coring: None.

Comments:

Secondary Pile # 538
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/26/94	1	DHD130A	62		1.75		35.43		03/28/94	30	2		14.5	121.0%	
05/17/94	2	DHD130A	110	62	2.03	1.72	23.65	36.05	05/18/94		31		25.7	20.7%	
07/30/94	2	XL-24	185	110	3.00	3.72	25.00	29.57	08/01/94			49	43.2	13.4%	

Total Drill Time = 6.78 Hours
Average Penetration Rate = 18.14 Feet / Hour
Total Redrill Time = 5.44 Hours
Average Penetration Rate = 31.62 Feet / Hour

Verticality Information
At Full Depth = 2" North X 0" E/W
S-ARC North = 27.76
S-ARC South = 25.29

Quality Coring: None.

Comments:

Primary Pile # 539
Area "B"

Area B

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/21/94	1	DHD130A	116		2.83			40.99	04/22/94	30			27.1	10.7%	
06/24/94	1	XL-24	185	116	3.58	1.25	19.27	92.80	06/04/94			47	43.2	8.8%	

Total Drill Time = 6.41 Hours
Average Penetration Rate = 10.76 Feet / Hour
Total Redrill Time = 1.25 Hours
Average Penetration Rate = 92.80 Feet / Hour

Verticality Information
At Full Depth = 1" North X 1" West
S-ARC North = 30.80
S-ARC South = 28.12

Quality Coring: None.

Comments:

Secondary Pile #540
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)		Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Overbreak
03/24/94	1	DHD130A	65		1.93		33.68			03/24/94	20	2.2		48.3%
05/31/94	1	DHD130A	110	65	1.70	1.80	26.47		36.11	06/01/94		29		12.9%
07/25/94	2	XL-24	185	110	7.79	5.00	9.63		22.00	07/26/94			53	22.7%

Total Drill Time = 11.42 Hours
Average Penetration Rate = 16.20 Feet / Hour
Total Redrill Time = 6.80 Hours
Average Penetration Rate = 25.74 Feet / Hour

Vertically Information
At Full Depth = 2.75' North X 0' East / West
S-ARC North = 29.12"
S-ARC South = 22.60"

Quality Coring: None.

Comments:

Primary Pile #541
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)		Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Overbreak
04/18/94	1	DHD130A	110		5.42		20.30			04/18/94	35			36.3%
06/21/94	1	DHD130A	185	110	4.95	1.25	15.15		88.00	06/22/94			55	27.3%

Total Drill Time = 10.37 Hours
Average Penetration Rate = 17.84 Feet / Hour
Total Redrill Time = 1.25 Hours
Average Penetration Rate = 88.00 Feet / Hour

Vertically Information
At Full Depth = 0' North / South X 0' East / West
S-ARC North = 22.60"
S-ARC South = 36.62"

Quality Coring: None.

Comments:

Secondary Pile #542
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/22/94	1	DHD130A	63		2.25			28.00		03/22/94	30			14.7	103.9%
05/11/94	2	DHD130A	110	63	1.42	3.25		33.10	19.38	05/12/94	25	6		25.7	20.7%
06/16/94	1	DHD130A	110	110		3.75			29.33	06/17/94		31		25.7	20.7%
07/28/94	2	XL-24	185	110	2.75	6.75		27.27	16.30	07/29/94			48	43.2	11.1%

Total Drill Time = 6.42 Hours
Average Penetration Rate = 28.82 Feet / Hour

Total Redrill Time = 13.75 Hours
Average Penetration Rate = 20.58 Feet / Hour

Verticality Information
At Full Depth = 8.0° North X 2.0° West
S-ARC North = 36.62°
S-ARC South = 16.73°

Quality Coring: None.

Comments:

Primary Pile #543
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/05/94	2	DHD130A	123		4.40		27.95			04/06/94	45	1.0		28.7	60.2%
06/14/94	1	XL-24	185	123	2.50	2.42	24.80		50.83	06/14/94			49	43.2	13.4%

Total Drill Time = 6.90 Hours
Average Penetration Rate = 26.81 Feet / Hour

Total Redrill Time = 2.42 Hours
Average Penetration Rate = 50.83 Feet / Hour

Verticality Information
At Full Depth = 2.5° North X 3.25° East
S-ARC North = 16.73°
S-ARC South = 29.96°

Quality Coring: None.

Comments:

Secondary Pile #544
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/18/94	2	DHD130A	64		2.75			23.27	03/18/94	50			14.9	234.6%	
05/05/94	1	XL-24	185	64	3.83		1.00	31.59	05/05/94			50	43.2	15.7%	

Total Drill Time = 6.58 Hours
Average Penetration Rate = 28.12 Feet / Hour

Total Redrill Time = 1.00 Hours
Average Penetration Rate = 64.00 Feet / Hour

Verticality Information
At Full Depth = 2.75" North X 5.5" East
S-ARC North = 29.96"
S-ARC South =

Quality Coring: None.

Comments:

Primary Pile #545
Area "B"

Area D

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/29/94	1	DHD130A	98		3.33		29.43		03/30/94	53			22.9	131.6%	
07/05/95	2	DHD130A	185		5.87	98	14.82	4.73	07/07/94			47	43.2	8.8%	

Total Drill Time = 9.20 Hours
Average Penetration Rate = 20.11 Feet / Hour

Total Redrill Time = 4.73 Hours
Average Penetration Rate = 20.72 Feet / Hour

Verticality Information
At Full Depth = 10" South X 6.5" West
S-ARC North = 36.88"
S-ARC South =

Quality Coring: None.

Comments:

Secondary Pile #546
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
03/16/94	1	DHD130A	61		2.25		27.11		215.9%
04/29/94	1	XL-24	185	61	4.08	1.17	30.39	52.14	18.1%

Total Drill Time = 6.33 Hours
Average Penetration Rate = 29.23 Feet / Hour
Total Redrill Time = 1.17 Hours
Average Penetration Rate = 52.14 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 1.0° East
S-ARC North = 36.88"
S-ARC South = 31.04"

Quality Coring: None.

Comments:

Primary Pile #547
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
04/11/94	2	DHD130A	95		4.58		20.74		71.3%
05/18/94	2	XL-24	186	95	3.08	2.17	29.55	43.78	12.8%

Total Drill Time = 7.66 Hours
Average Penetration Rate = 24.28 Feet / Hour
Total Redrill Time = 2.17 Hours
Average Penetration Rate = 43.78 Feet / Hour

Verticality Information
At Full Depth = 3.5° North X 2.5° West
S-ARC North = 31.04"
S-ARC South = 22.99"

Quality Coring: None.

Comments: 115' of tremie pipe left in hole. Was hung at bottom of hole due to fast setting concrete.

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
12/16/93	2	DHD130A	54		3.00		18.00		12/16/93	54	48		12.6	708.9%
04/02/94	1	DHD130A	65	54	0.25	3.33	44.00	16.22	04/02/94	24	1.4		15.2	67.3%
05/03/94	1	DHD130A	185	65	8.09	1.18	14.83	55.08	05/03/94			48	43.2	11.1%

Total Drill Time =	11.34 Hours
Average Penetration Rate =	16.31 Feet / Hour
 Total Redrill Time =	 4.51 Hours
Average Penetration Rate =	26.39 Feet / Hour

Veracity Information

At Full Depth =	1.0° North X 1.5° West
S-ARC North =	22.99°
S-ARC South =	27.05°

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/15/94	2	DHD130A	112		5.33			21.01		04/15/94	40		26.2	52.9%
06/01/94	1	XL-24	185	112	2.83	2.42	25.80	46.28	06/03/94			48	43.2	11.1%

Total Drill Time =	8.16 Hours
Average Penetration Rate =	22.67 Feet / Hour
Total Redrill Time =	2.42 Hours
Average Penetration Rate =	46.28 Feet / Hour

Vertically Information	1.25" North X 0" East / West
At Full Depth =	27.05"
S-ARC North =	24.93"
S-ARC South =	

Quality Coring: None.

Comments:

Secondary Pile #550
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/19/93	1	XL-24	64		0.92		69.57		10/19/93		25		14.9	67.3%
11/06/93	1	DHD130A	52	64		3.25		19.69	11/30/93		38		12.1	212.9%
03/25/94	1	DHD130A	65	52		2.42		21.49	03/25/94	20	2.2		15.2	46.3%
04/22/94	1	DHD130A	63	65		1.00		65.00	04/22/94		27		14.7	83.5%
05/13/94	1	DHD130A	120	63	2.08	3.83	27.40	16.45	05/13/94		32		28.0	14.2%
06/28/94	1	XL-24	185	120	3.25	2.75	20.00	43.64	06/28/94			47	43.2	8.8%

Total Drill Time = 6.25 Hours
Average Penetration Rate = 29.60 Feet / Hour

Total Redrill Time = 13.25 Hours
Average Penetration Rate = 27.47 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 0° East / West
S-ARC North = 24.93"
S-ARC South = 26.76"

Quality Coring: None.

Comments:

Primary Pile #551
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/13/94	2	DHD130A	123		5.34		23.03		04/13/94		40		28.7	39.3%
05/24/94	1	XL-24	185	123	2.92	2.75	21.23	44.73	05/26/94			48	43.2	11.1%

Total Drill Time = 8.26 Hours
Average Penetration Rate = 22.40 Feet / Hour

Total Redrill Time = 2.75 Hours
Average Penetration Rate = 44.73 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 0° East / West
S-ARC North = 26.76"
S-ARC South = 20.22"

Quality Coring: None.

Comments:

Secondary Pile #552
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/17/93	1	DHD130A	65		1.33		48.87		10/13/94		18		15.2	18.6%
03/14/94	1	DHD130A	65	65		2.50		26.00	03/14/94	42			15.2	176.7%
05/16/94	2	DHD130A	110		2.00	2.92	22.50	22.26	05/17/94		31.5		25.7	22.6%
07/13/94	1	XL-24	185	110	2.27	4.26	33.04	25.82	07/14/94			47.5	43.2	10.0%

Total Drill Time = 5.60 Hours
Average Penetration Rate = 33.04 Feet / Hour

Total Redrill Time = 9.68 Hours
Average Penetration Rate = 24.79 Feet / Hour

Verticality Information
At Full Depth = 4.0° South X 3.0° West
S-ARC North = 20.22°
S-ARC South = 30.73°

Quality Coring: None.

Comments:

Primary Pile #553
Area "B"

Area D

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/07/94	2	DHD130A	103		3.67		28.07		04/08/94	164	2.8		24.1	583.5%
08/20/94	1	XL-24	185	103	3.67	2.92	22.34	35.27	06/20/94			48	43.2	11.1%

Total Drill Time = 7.34 Hours
Average Penetration Rate = 25.20 Feet / Hour

Total Redrill Time = 2.92 Hours
Average Penetration Rate = 35.27 Feet / Hour

Verticality Information
At Full Depth = 1.0° South X 2.0° West
S-ARC North = 30.73°
S-ARC South = 23.90°

Quality Coring: None.

Comments:

Secondary Pile #554
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/18/94	1	XL-24	62		1.59			39.24	03/18/94	25		14.5	72.7%		
05/18/94	2	DHD130A	105	62	0.87	1.13	49.43	54.87	05/19/94		32	24.5	30.5%		
07/11/94	1	DHD130A	185	105	3.83	3.75	20.89	28.00	07/12/94		48	43.2	11.1%		

Total Drill Time = 6.28 Hours
Average Penetration Rate = 29.46 Feet / Hour

Total Redrill Time = 4.88 Hours
Average Penetration Rate = 34.22 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 10° East
S-ARC North = 23.90"
S-ARC South = 22.71"

Quality Coring: None.

Comments:

Primary Pile #555
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/18/94	1	DHD130A	105		3.83			27.42		04/19/94	100	8		24.5	340.5%
05/05/94	1	DHD130A	105	105		2.42			43.39	05/05/94	35	6		24.5	67.2%
05/27/94	1	DHD130A	185	105	3.33	2.17	24.02	48.39		05/27/94			51.5	43.2	19.2%

Total Drill Time = 7.16 Hours
Average Penetration Rate = 25.84 Feet / Hour

Total Redrill Time = 4.59 Hours
Average Penetration Rate = 45.75 Feet / Hour

Verticality Information
At Full Depth = 0.75° South X 0° East / West
S-ARC North = 22.71"
S-ARC South = 14.24"

Quality Coring: None.

Comments:

Secondary Pile #556
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Redrill (FT)	Concrete		Grout		Non-Spec. Concrete		Spec. Concrete		Theoretical Volume	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)		Date	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	Overbreak
03/17/94	1	DHD130A	64		1.00		64.00			03/17/94		45						14.9	201.1%
05/17/94	1	DHD130A	100	64	1.13	1.95	31.86			05/18/94	29.5							23.4	26.3%
06/30/94	1	XL-24	185	100	2.75	3.33	30.91			07/01/94						47		43.2	8.8%

Total Drill Time = 4.88 Hours
Average Penetration Rate = 37.91 Feet / Hour

Total Redrill Time = 5.28 Hours
Average Penetration Rate = 31.06 Feet / Hour

Verticality Information
At Full Depth = 7.0° South X 7.0° West
S-ARC North = 14.24"
S-ARC South = 31.14"

Quality Coring: None.

Comments:

Primary Pile #557
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Redrill (FT)	Concrete		Grout		Non-Spec. Concrete		Spec. Concrete		Theoretical Volume	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)		Date	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	Overbreak
04/27/94	1	DHD130A	94		3.34		28.14			04/28/94		55				9		22.0	191.6%
06/08/94	1	XL-24	185	94	3.08	2.17	29.55			06/09/94						50		43.2	15.7%

Total Drill Time = 6.42 Hours
Average Penetration Rate = 28.82 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 43.32 Feet / Hour

Verticality Information
At Full Depth = 3.5° South X 10° West
S-ARC North = 31.14"
S-ARC South = 20.14"

Quality Coring: None.

Comments:

Secondary Pile #558
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/21/94	1	DHD130A	65		1.25		52.00		03/21/94	20			15.2	31.8%
05/10/94	2	DHD130A	95	65	1.36	1.02	22.06	63.73	05/11/94	30	3.5		22.2	51.0%
05/25/94	2	DHD130A	185	95	8.09	1.33	11.12	71.43	05/25/94			52.5	43.2	21.5%

Total Drill Time = 10.70 Hours
Average Penetration Rate = 17.29 Feet / Hour

Total Redrill Time = 2.35 Hours
Average Penetration Rate = 68.09 Feet / Hour

Verticality Information
At Full Depth = 7.0" South X 3.75" West
S-ARC North = 20.14"
S-ARC South = 37.78"

Quality Coring: None.
Comments:

Primary Pile #559
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/21/94	1	DHD130A	95		2.53		37.55		04/21/94	45			22.2	102.8%
06/28/94	1	XL-24	185	95	3.17	2.00	28.39	47.50	06/29/94			47	43.2	8.8%

Total Drill Time = 5.70 Hours
Average Penetration Rate = 32.46 Feet / Hour

Total Redrill Time = 2.00 Hours
Average Penetration Rate = 47.50 Feet / Hour

Verticality Information
At Full Depth = 2.0" North X 2.0" West
S-ARC North = 37.78"
S-ARC South = 19.33"

Quality Coring: None.
Comments:

Secondary Pile #560
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/23/94	1	DHD130A	62		1.17		52.99		03/24/94	20	2.2		14.5	53.3%
06/03/94	2	DHD130A	100	62	1.92	1.67	19.79	37.13	06/07/94	25	2		23.4	15.6%
06/16/94	1	DHD130A	95	100		1.30	1.30	76.92	06/17/94		30		22.2	35.2%
07/18/94	1	XL-24	185	100	3.92	3.33	21.68	30.03	07/19/94			48	43.2	11.1%

Total Drill Time = 7.01 Hours
Average Penetration Rate = 25.68 Feet / Hour

Total Redrill Time = 6.30 Hours
Average Penetration Rate = 41.59 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 10° East
S-ARC North = 19.33°
S-ARC South = 19.91°

Quality Coring: None.

Comments:

Primary Pile #561
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/15/94	2	DHD130A	104		4.00		26.00		04/15/94	30	2.9		24.3	35.5%
06/24/94	1	XL-24	185	104	3.25	2.00	24.92	52.00	06/27/94			47	43.2	8.8%

Total Drill Time = 7.25 Hours
Average Penetration Rate = 25.52 Feet / Hour

Total Redrill Time = 2.00 Hours
Average Penetration Rate = 52.00 Feet / Hour

Verticality Information
At Full Depth = 2.5° South X 0° East / West
S-ARC North = 19.91°
S-ARC South = 23.62°

Quality Coring: None.

Comments:

Secondary Pile #562
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/22/94	1	DHD130A	63		1.75		36.00		03/22/94	20			14.7	35.9%
06/10/94	2	DHD130A	100	63	1.67	2.00	22.16	31.50	06/13/94		43		23.4	84.1%
07/13/94	1	XL-24	185	100	3.67	3.58	23.16	27.93	07/14/94			47	43.2	8.8%

Total Drill Time = 7.09 Hours
Average Penetration Rate = 26.09 Feet / Hour

Total Redrill Time = 5.58 Hours
Average Penetration Rate = 29.21 Feet / Hour

Verticality Information
At Full Depth = 4.5" South X 2.5" East
S-ARC North = 23.62"
S-ARC South = 22.13"

Quality Coring: None.

Comments:

Primary Pile #563
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/08/94	2	DHD130A	96		3.00		32.00		04/09/94	60			22.4	167.6%
06/21/94	1	XL-24	185	96	3.35	1.73	26.57	55.49	06/22/94			47	43.2	8.8%

Total Drill Time = 6.35 Hours
Average Penetration Rate = 29.13 Feet / Hour

Total Redrill Time = 1.73 Hours
Average Penetration Rate = 55.49 Feet / Hour

Verticality Information
At Full Depth = 6.0" South X 6.5" West
S-ARC North = 22.13"
S-ARC South = 22.26"

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/17/94	1	DHD130A	65		1.33		48.87		03/17/94	20			15.2	31.8%
05/31/94	1	DHD130A	96	65	0.83	1.80	37.35	36.11	06/01/94		28		22.4	24.9%
07/05/94	1	XL-24	185	96	2.58	2.92	34.50	32.88	07/05/94			47	43.2	8.8%

Vertically Information

At Full Depth =	7.75" South X 1.5" East
S-ARC North =	22.26"
S-ARC South =	21.41"

Primary Pile #565
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Re-drill (FT)	Drill (HRS)	Re-drill (HRS)	Drill (FT / HR)	Re-drill (FT / HR)						
03/29/94	1	DHD130A	97		2.67		36.33		92		22.7	306.2%		
06/23/94	1	XL-24	185	97	2.83	2.75	31.10	35.27	06/24/94	47	43.2	8.8%		

Vertically Information

Quality Coring: None.

Comments:

Secondary Pile #566
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
03/21/94	1	DHD130A	65		1.25		52.00		18.6%
04/28/94	1	XL-24	185	65	8.17	1.00	14.69	65.00	85.2%
05/12/94	2	DHD130A	185	185		5.00		37.00	41.2%

Total Drill Time = 9.42 Hours
Average Penetration Rate = 19.64 Feet / Hour

Total Redrill Time = 6.00 Hours
Average Penetration Rate = 41.67 Feet / Hour

Verticality Information
At Full Depth = 15° South X 9.0° West
S-ARC North = 18.94"
S-ARC South = 38.13"

Quality Coring: None.

Comments:

Primary Pile #567
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
04/05/94	2	DHD130A	99		3.33		29.73		42.3%
06/15/94	1	XL-24	185	99	3.25	2.17	26.46	45.62	8.8%

Total Drill Time = 6.58 Hours
Average Penetration Rate = 28.12 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 45.62 Feet / Hour

Verticality Information
At Full Depth = 4.0° South X 2.0° West
S-ARC North = 38.13"
S-ARC South = 24.72"

Quality Coring: None.

Comments:

Secondary Pile #568
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/16/94	1	DHD130A	64		1.33		48.12		03/16/94	23			14.9	53.9%
05/16/94	2	DHD130A	100	64	0.28	2.38	128.57	26.89	05/17/94		28		23.4	19.9%
07/26/94	2	DHD130A	185	100	7.58	1.67	11.21	59.88	07/27/94			47.5	43.2	10.0%

Total Drill Time = 9.19 Hours
Average Penetration Rate = 20.13 Feet / Hour

Total Redrill Time = 4.05 Hours
Average Penetration Rate = 40.49 Feet / Hour

Vertically Information
At Full Depth = 5.0' South X 2.5' East
S-ARC North = 24.72"
S-ARC South = 24.72"

Quality Coring: None.

Comments:

Primary Pile #569
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/01/94	2	DHD130A	98		5.25		18.67		04/01/94	45			22.9	96.6%
05/31/94	2	DHD130A	165	98	5.33	98	16.32	5.58	05/31/94			50	43.2	15.7%

Total Drill Time = 10.58 Hours
Average Penetration Rate = 17.49 Feet / Hour

Total Redrill Time = 5.58 Hours
Average Penetration Rate = 17.56 Feet / Hour

Vertically Information
At Full Depth = 6.0' South X 7.0' East
S-ARC North = 24.72"
S-ARC South = 32.02"

Quality Coring: None.

Comments:

Secondary Pile #570
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout		Non-Spec. Concrete		Spec. Concrete		Theoretical Volume		Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)		(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)
12/06/94	1	DHD130A	94		2.67		35.21		12/06/93				72			22.0		228.0%	
08/04/94	1	XL-24	185	94	2.92	3.07	31.16	30.62	08/05/94					49.5		43.2		14.6%	

Total Drill Time = 5.59 Hours
Average Penetration Rate = 33.09 Feet / Hour

Total Redrill Time = 3.07 Hours
Average Penetration Rate = 30.62 Feet / Hour

Verticality Information
At Full Depth = 2.0° South X 7.5° East
S-ARC North = 32.02°
S-ARC South = 27.82°

Quality Coring: None.

Comments:

Primary Pile #571
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout		Non-Spec. Concrete		Spec. Concrete		Theoretical Volume		Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)		(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)
04/12/94	2	DHD130A	96		5.00		19.20		04/12/94				1.0			22.4		60.6%	
06/27/94	1	XL-24	185	96	3.65	2.07	24.38	46.38	06/28/94					47		43.2		8.8%	

Total Drill Time = 8.65 Hours
Average Penetration Rate = 21.39 Feet / Hour

Total Redrill Time = 2.07 Hours
Average Penetration Rate = 46.38 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 0° East / West
S-ARC North = 27.82°
S-ARC South = 39.10°

Quality Coring: None.

Comments:

Secondary Pile #572
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
12/14/93	2	DHD130A	90		3.08		29.22		12/18/93		61		21.0	190.2%	
03/14/94	1	DHD130A	41	90		2.08	43.27		03/15/94	45			9.6	370.0%	
05/10/94	1	XL-24	215	90	5.00	1.67	53.89		05/10/94			63	50.2	25.5%	

Total Drill Time = 8.08 Hours
Average Penetration Rate = 20.54 Feet / Hour

Total Redrill Time = 3.75 Hours
Average Penetration Rate = 48.00 Feet / Hour

Verticality Information
At Full Depth = 12.0° North X 7.0° East
S-ARC North = 39.10"
S-ARC South = 14.71"

Quality Coring: None.

Comments: Drilled extra 30' because of shale strata

Primary Pile #573
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/06/94	2	DHD130A	98		3.42		28.65		04/06/93	40			22.9	74.8%	
06/22/94	1	DHD130A	185	98	3.00	2.17	29.00	45.16	06/23/94			48	43.2	11.1%	

Total Drill Time = 6.42 Hours
Average Penetration Rate = 28.82 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 45.16 Feet / Hour

Verticality Information
At Full Depth = 8.0° North X 6.0° West
S-ARC North = 14.71"
S-ARC South = 0.39"

Quality Coring: None.

Comments:

Secondary Pile #574
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
03/18/94	1	DHD130A	65		2.00		32.50		44.9%
05/17/94	2	DHD130A	100	65	1.67	1.92	20.96	33.85	32.8%
07/28/94	2	XL-24	185	100	3.42	3.67	24.85	27.25	15.7%

Total Drill Time = 7.09 Hours
Average Penetration Rate = 26.09 Feet / Hour

Total Redrill Time = 5.59 Hours
Average Penetration Rate = 29.52 Feet / Hour

Verticality Information
At Full Depth = 1.5" North X 9.0" East
S-ARC North = 0.39"
S-ARC South = 23.63"

Quality Coring: None.

Comments:

Primary Pile #575
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
04/13/94	2	DHD130A	99		3.08		32.14		128.8%
06/24/94	1	XL-24	185	99	2.75	2.17	31.27	45.62	12.3%

Total Drill Time = 5.83 Hours
Average Penetration Rate = 31.73 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 45.62 Feet / Hour

Verticality Information
At Full Depth = 1.0" North X 0" East / West
S-ARC North = 23.63"
S-ARC South = 27.00"

Quality Coring: None.

Comments:

Secondary Pile #576
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete		Grout		Non-Spec. Concrete		Spec. Concrete		Theoretical Volume		Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Date		(CU.YD.)		(CU.YD.)		(CU.YD.)		(CU.YD.)		
03/26/94	1	DHD130A	62		1.65		37.58		03/26/94	20							14.5		38.1%
05/11/94	2	DHD130A	100	62	1.85	1.32	20.54	46.97	05/12/94	30		4.5					23.4		47.7%
05/25/94	2	DHD130A	185	100	6.00	2.33	14.17	42.92	05/26/94						52		43.2		20.4%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 19.47 Feet / Hour

Total Redrill Time = 3.65 Hours
Average Penetration Rate = 44.38 Feet / Hour

Verticality Information
At Full Depth = 1.5" North X 4.0" East
S-ARC North = 27.00"
S-ARC South = 17.67"

Quality Coring: None.

Comments:

Primary Pile #577
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete		Grout		Non-Spec. Concrete		Spec. Concrete		Theoretical Volume		Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Date		(CU.YD.)		(CU.YD.)		(CU.YD.)		(CU.YD.)		
04/08/94	2	DHD130A	87		2.42		35.95		04/08/94	52.5							20.3		158.4%
07/08/94	1	XL-24	185	87	3.88	1.87	25.26	46.52	07/11/94						49.5		43.2		14.6%

Total Drill Time = 6.30 Hours
Average Penetration Rate = 29.37 Feet / Hour

Total Redrill Time = 1.87 Hours
Average Penetration Rate = 46.52 Feet / Hour

Verticality Information
At Full Depth = 4.5" South X 4.25" East
S-ARC North = 17.67"
S-ARC South = 26.22"

Quality Coring: None.

Comments:

Secondary Pile #578
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak			
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/16/94	1	DHD130A	65		1.67		38.92		20		15.2	31.8%			
06/13/94	2	DHD130A	100	65	1.69	2.06	20.71	31.55	30		23.4	28.5%			
08/01/94	1	XL-24	185	100	3.23	3.27	26.32	30.58		48	43.2	11.1%			

Secondary Pile #580
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
10/19/93	1	XL-24	45		1.45		31.03			10/19/93		13		10.5	23.7%	
04/23/94	1	DHD130A	65	45	0.67	2.42	29.85	18.60		04/25/94	20	2.1		15.2	45.6%	
06/14/94	2	DHD130A	105	65	1.43	1.40	27.97	46.43		06/15/94		31		24.5	26.4%	
08/08/94	1	XL-24	185	105	3.42	3.42	23.39	30.70		08/09/94			48	43.2	11.1%	

Total Drill Time = 6.97 Hours
Average Penetration Rate = 26.54 Feet / Hour

Total Redrill Time = 7.24 Hours
Average Penetration Rate = 29.70 Feet / Hour

Verticality Information
At Full Depth = 1.75" South X 5.5" East
S-ARC North = 16.67"
S-ARC South = 21.76"

Quality Coring: None.

Comments:

Primary Pile #581
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
06/02/94	2	DHD130A	103		4.75		21.68			06/02/94	45	6.0		24.1	112.0%	
07/06/94	1	XL-24	185	103	4.97	2.37	16.50	43.46		07/07/94			55	43.2	27.3%	

Total Drill Time = 9.72 Hours
Average Penetration Rate = 19.03 Feet / Hour

Total Redrill Time = 2.37 Hours
Average Penetration Rate = 43.46 Feet / Hour

Verticality Information
At Full Depth = 5.0" South X 6.0" East
S-ARC North = 21.76"
S-ARC South = 30.02"

Quality Coring: None.

Comments:

Secondary Pile #582

Area "B"

Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/17/93	1	DHD130A	124		6.25		19.84		10/13/93		89		29.0	207.4%
10/22/93	2	240	51	124		2.25		55.11	12/10/93		65.5		11.9	450.0%
06/16/94	2	DHD130A	124			4.00		12.75	06/16/94		35		29.0	20.9%
08/12/94	1	XL-24	185	124	2.92	4.83	20.89	25.67	08/16/94			47.5	43.2	10.0%

Total Drill Time = 9.17 Hours
Average Penetration Rate = 20.17 Feet / Hour

Total Redrill Time = 11.08 Hours
Average Penetration Rate = 26.99 Feet / Hour

Verticality Information
At Full Depth = 2.0° South X 1.5° East
S-ARC North = 30.02°
S-ARC South = 26.71°

Quality Coring: None.

Comments: Clam in hole approx. 54' deep. (09/17/93)
12/10/93 Piles # 582 - 586 were connected, so when one pile was poured they both filled with concrete.

Primary Pile #583

Area "B"

Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/14/94	2	DHD130A	54		2.42		22.31		04/14/94		15.5		12.6	22.9%
06/09/94	2	DHD130A	105	54	2.49	2.43	20.48	22.22	06/09/94	30	2		24.5	30.5%
07/11/94	1	DHD130A	185	105	6.17	4.00	12.97	26.25	07/12/94			48.5	43.2	12.3%

Total Drill Time = 11.08 Hours
Average Penetration Rate = 16.70 Feet / Hour

Total Redrill Time = 6.43 Hours
Average Penetration Rate = 24.73 Feet / Hour

Verticality Information
At Full Depth = 2.0° South X 0° East / West
S-ARC North = 26.71°
S-ARC South = 28.69°

Quality Coring: None.

Comments: Recovered clam (see above) on 04/16/94

Secondary Pile #584
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
10/21/93	1	XL-24	45	45	1.42		31.69		10/21/93		16		10.5	52.3%					
03/18/94	1	DHD130A	53	53	0.68		11.76		04/05/94	20	3.5		12.4	73.5%					
03/28/94	1	DHD130A	58	58					04/20/94		15		13.5	19.0%					
04/14/94	2	DHD130A	54	58					04/27/94	20			12.6	33.8%					
04/26/94	1	DHD130A	64	64					06/20/94		42		14.9	43.9%					
06/17/94	2	DHD130A	125	125					08/11/94			47	29.2	8.8%					
08/10/94	1	XL-24	185	125									43.2						

Total Drill Time = 2.10 Hours
Average Penetration Rate = 25.24 Feet / Hour

Total Redrill Time = 3.48 Hours
Average Penetration Rate = 12.93 Feet / Hour

Vertically Information
At Full Depth = 0.5" South X 2.0" East
S-ARC North = 28.69"
S-ARC South = 23.80"

Quality Coring: None.

Comments:

Primary Pile #585
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
04/12/94	2	DHD130A	58	58	3.33		17.42		04/20/94	5	15		13.5	47.7%					
06/13/94	2	XL-24	125	58	4.17	2.75	16.07	21.09	06/13/94	35	6		29.2	40.5%					
07/14/94	1	DHD130A	185	125	3.97	5.53	15.11	22.60	07/15/94			55	43.2	27.3%					

Total Drill Time = 11.47 Hours
Average Penetration Rate = 16.13 Feet / Hour

Total Redrill Time = 8.28 Hours
Average Penetration Rate = 22.10 Feet / Hour

Vertically Information
At Full Depth = 4.0" South X 2.5" East
S-ARC North = 23.80"
S-ARC South = 26.25"

Quality Coring: None.

Comments: 4/20/94 grout silo auger motor broke down after placing 5 cu. yds. of grout, pile filled with 'non-spec'.

Secondary Pile #586
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Theoretical Volume (CU.YD.)
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
11/29/94	2	DHD130A	50		1.67		29.94		11.7
06/21/94	2	DHD130A	125	50	2.78	1.88	26.96	26.60	29.2
07/27/94	2	DHD130A	185	125	3.77	6.10	15.92	20.49	43.2
									46.5
									242.6%
									19.9%
									7.6%

Total Drill Time = 8.22 Hours
Average Penetration Rate = 22.51 Feet / Hour

Total Redrill Time = 7.98 Hours
Average Penetration Rate = 21.93 Feet / Hour

Verticality Information
At Full Depth = 1.5" South X 5.5" West
S-ARC North = 26.25"
S-ARC South = 27.36"

Quality Coring: None.

Comments:

Primary Pile #587
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Theoretical Volume (CU.YD.)
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
06/07/94	2	DHD130A	123		5.50		22.36		28.7
07/18/94	1	DHD130A	185	123	5.17	6.50	11.99	18.92	43.2
									50.5
									46.2%
									16.9%

Total Drill Time = 10.67 Hours
Average Penetration Rate = 17.34 Feet / Hour

Total Redrill Time = 6.50 Hours
Average Penetration Rate = 18.92 Feet / Hour

Verticality Information
At Full Depth = 1.0" South X 7.5" West
S-ARC North = 27.36"
S-ARC South = 24.61"

Quality Coring: None.

Comments:

Secondary Pile #588
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
03/15/94	1	DHD130A	63		3.00		21.00		103.9%
06/29/94	2	DHD130A	125	63	3.27	2.15	18.96	29.30	37.0%
08/18/94	1	DHD130A	185	125	4.27	2.40	14.05	52.08	8.8%

Total Drill Time = 10.54 Hours
Average Penetration Rate = 17.55 Feet / Hour

Total Redrill Time = 4.55 Hours
Average Penetration Rate = 41.32 Feet / Hour

Verticality Information
At Full Depth = 1.0° South X 1.0° East
S-ARC North = 24.61"
S-ARC South = 36.18"

Quality Coring: None.

Comments:

Primary Pile #589
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Overbreak
05/31/94	2	DHD130A	99		5.17		19.15		73.0%
08/01/94	1	XL-24	185	99	4.37	2.72	19.68	36.40	20.4%

Total Drill Time = 9.54 Hours
Average Penetration Rate = 19.39 Feet / Hour

Total Redrill Time = 2.72 Hours
Average Penetration Rate = 36.40 Feet / Hour

Verticality Information
At Full Depth = 6.5° North X 1.75° East
S-ARC North = 36.18"
S-ARC South = 17.59"

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rtg #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/17/94	1	DHD130A	65		2.83		22.97		03/17/94	31			15.2	104.2%
07/01/94	1	DHD130A	109	65	2.40	1.85	18.33	35.14	07/01/94		29		25.5	13.9%
07/20/94	1	XL-24	185	109	3.65	4.18	20.82	26.08	07/21/94			49.5	43.2	14.6%

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/26/94	1	DHD130A	98		4.50		21.78			04/26/94	30		1	22.9	35.5%
08/04/94	1	XL24	185	98	3.55	2.53	24.51	38.74		08/05/94				43.2	11.1%

Quality Coring: None.

Comments:

Secondary Pile # 592
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/30/94	1	DHD130A	65			2.17	ERR		03/30/94	33			15.2	117.4%	
06/23/94	2	DHD130A	100	65	1.92	1.92	18.23	33.85	06/23/94		32		23.4	37.0%	
08/08/94	1	XL24	185	100	3.67	4.08	23.16	24.51	08/09/94			49	43.2	13.4%	

Total Drill Time = 5.59 Hours
Average Penetration Rate = 33.09 Feet / Hour

Total Redrill Time = 8.17 Hours
Average Penetration Rate = 20.20 Feet / Hour

Vertically Information
At Full Depth = 2.25" South X 6.75" East
S--ARC North = 25.24
S--ARC South = 18.09

Quality Coring: None.

Comments:

Primary Pile # 593
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/23/94	1	DHD130A	93		4.00		23.25		04/23/94	62			21.7	185.5%
07/29/94	2	XL-24	185	93	3.80	2.37	24.21	39.24	08/01/94			49	43.2	13.4%

Total Drill Time = 7.80 Hours
Average Penetration Rate = 23.72 Feet / Hour

Total Redrill Time = 2.37 Hours
Average Penetration Rate = 39.24 Feet / Hour

Vertically Information
At Full Depth = 6.5" South X 1" West
S--ARC North = 22.57
S--ARC South = 32.74

Quality Coring: None.

Comments:

Secondary Pile # 594
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/04/94	2	DHD130A	65		2.25		28.89		04/04/94	27.5			15.2	81.2%	
06/13/94	2	DHD130A	100	65	1.03	1.59	33.98	40.88	06/14/94		28		23.4	19.9%	
08/15/94	1	DHD130A	185	100	5.18	6.22	16.41	16.08	08/16/94			47.5	43.2	10.0%	

Total Drill Time = 8.46 Hours
Average Penetration Rate = 21.87 Feet / Hour

Total Redrill Time = 7.81 Hours
Average Penetration Rate = 21.13 Feet / Hour

Verticality Information
At Full Depth = 1.75" South X 1.5" East
S-ARC North = 18.09
S-ARC South = 25.08

Quality Coring: None.

Comments:

Primary Pile # 595
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
05/23/94	2	DHD130A	106		5.08		20.87		05/23/94	50	3		24.8	114.1%	
07/26/94	2	XL-24	185	106	6.25	4.10	12.64	25.85	07/27/94			48	43.2	11.1%	

Total Drill Time = 11.33 Hours
Average Penetration Rate = 16.33 Feet / Hour

Total Redrill Time = 4.10 Hours
Average Penetration Rate = 25.85 Feet / Hour

Verticality Information
At Full Depth = 2.51" South X 3" West
S-ARC North = 32.74
S-ARC South = 29.72

Quality Coring: None.

Comments:

Secondary Pile # 596
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/06/94	2	DHD130A	65		2.17			29.95	04/06/94	20	2.5		15.2	48.2%
06/15/94	2	DHD130A	105	65	1.11	1.31		36.04	06/16/94			31	24.5	26.4%
08/10/94	1	XL-24	185	105	4.10	3.98		19.51	08/11/94			47	43.2	8.8%

Total Drill Time = 7.38 Hours
Average Penetration Rate = 25.07 Feet / Hour

Total Redrill Time = 5.29 Hours
Average Penetration Rate = 32.14 Feet / Hour

Verticality Information
At Full Depth = 1" North X 4.5" East
S-ARC North = 25.08
S-ARC South = 22.58

Quality Coring: None.
Comments:

Primary Pile # 597
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/09/94	2	DHD130A	105		3.58		29.33		06/09/94	50		18	24.5	177.3%
07/21/94	1	XL-24	185	105	3.47	3.53	23.05	29.75	07/22/94			50	43.2	15.7%

Total Drill Time = 7.05 Hours
Average Penetration Rate = 26.24 Feet / Hour

Total Redrill Time = 3.53 Hours
Average Penetration Rate = 29.75 Feet / Hour

Verticality Information
At Full Depth = 1.75" South X 4" East
S-ARC North = 29.72
S-ARC South = 34.09

Quality Coring: None.
Comments:

Secondary Pile # 598
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/30/94	1	DHD130A	63		2.00		31.50		03/30/94	23	3		14.7	76.7%
06/17/94	2	DHD130A	105	63	1.33	2.25	31.56	28.00	06/20/94		34		24.5	38.7%
08/04/94	1	DHD130A	185	105	6.83	5.00	11.71	21.00	08/04/94			47	43.2	8.8%

Total Drill Time = 10.16 Hours
Average Penetration Rate = 18.21 Feet / Hour

Total Redrill Time = 7.25 Hours
Average Penetration Rate = 23.17 Feet / Hour

Verticality Information
At Full Depth = 4" North X 5.5" East
S-ARC North = 22.58
S-ARC South = 15.51

Quality Coring: None.

Comments:

Primary Pile # 599
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/03/94	2	DHD130A	104		3.17		32.81		06/03/94		9		24.3	163.5%
07/06/94	1	XL-24	185	104	3.88	2.62	20.88	39.69	07/06/94	55		48	43.2	11.1%

Total Drill Time = 7.05 Hours
Average Penetration Rate = 26.24 Feet / Hour

Total Redrill Time = 2.62 Hours
Average Penetration Rate = 39.69 Feet / Hour

Verticality Information
At Full Depth = 2" South X 0" E/W
S-ARC North = 34.09
S-ARC South = 19.54

Quality Coring: None.

Comments:

Secondary Pile #600
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/25/94	1	DHD130A	58		2.08			27.88		03/26/94	20			13.5	47.7%
06/22/94	2	DHD130A	105	58	2.03	1.55		23.15	37.42	06/22/94		30.5		24.5	24.4%
08/17/94	1	DHD130A	185	105	6.60	6.48		12.12	16.20	08/18/94			47	43.2	8.8%

Total Drill Time = 10.71 Hours
Average Penetration Rate = 17.27 Feet / Hour

Total Redrill Time = 8.03 Hours
Average Penetration Rate = 20.30 Feet / Hour

Verticality Information
At Full Depth = 6.5" South X 1.5" East
S-ARC North = 19.54"
S-ARC South = 21.32"

Quality Coring: None.

Comments:

Primary Pile #601
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/20/94	2	DHD130A	105		6.25			16.80	05/20/94	65	3.0		24.5	177.3%
06/29/94	2	XL-24	185	105	3.58	2.50		22.35	06/30/94			48	43.2	11.1%

Total Drill Time = 9.83 Hours
Average Penetration Rate = 18.82 Feet / Hour

Total Redrill Time = 2.50 Hours
Average Penetration Rate = 42.00 Feet / Hour

Verticality Information
At Full Depth = 10" South X 0" East / West
S-ARC North = 21.32"
S-ARC South = 33.70"

Quality Coring: None.

Comments:

Secondary Pile #602
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Pig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/22/94	1	DHD130A	64		2.50		25.60		03/23/94	20			14.9	33.8%	
06/27/94	2	DHD130A	105	64	1.97	1.70	20.81	37.65	06/27/94		30		24.5	22.4%	
08/23/94	1	DHD130A	185	105	5.33	6.08	15.01	17.27	08/25/94			47	43.2	8.8%	

Total Drill Time = 9.80 Hours
Average Penetration Rate = 18.88 Feet / Hour

Total Redrill Time = 7.78 Hours
Average Penetration Rate = 21.72 Feet / Hour

Verticality Information
At Full Depth = 5" South X 2.0" East
S-ARC North = 33.70"
S-ARC South = 30.14"

Quality Coring: None.

Comments:

Primary Pile #603
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/17/94	1	DHD130A	7		0.50		14.00						1.6		
05/09/94	1	DHD130A	95	95	3.08	0.25	30.84	0.00	05/11/94	60	4.5		22.2	190.7%	
07/12/94	1	XL-24	185	95	12.00	5.30	7.50	17.92	07/13/94			57.5	43.2	33.1%	

Total Drill Time = 15.58 Hours
Average Penetration Rate = 12.32 Feet / Hour

Total Redrill Time = 5.55 Hours
Average Penetration Rate = 17.12 Feet / Hour

Verticality Information
At Full Depth = 2.0" South X 2.0" East
S-ARC North = 30.14"
S-ARC South = 28.86"

Quality Coring: None.

Comments:

Secondary Pile #604
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak			
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/21/94	1	DHD130A	62		2.75		22.55		21		14.5	45.0%			
06/23/94	2	DHD130A	100	62	1.37	1.97	27.74	31.47		27	23.4	15.6%			
07/30/94	2	XL-24	185	100	4.53	3.42	18.76	29.24			50	15.7%			

Primary Pile #605
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage			Pure Drill Time		Penetration Rate		Spec. Concrete (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date					Grout (CU.YD.)
04/25/94	1	DHD130A	95		3.67		25.89			04/26/94	90	8.0	22.2	341.8%
07/15/94	1	XL-24	185	95	5.00	2.83	18.00	33.57		07/15/94			49	13.4%

Secondary Pile #606
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
03/15/94	1	DHD130A	65		2.67		24.34		03/15/94	47			15.2	209.6%		
06/09/94	2	DHD130A	100		1.12	65	31.25	1.88	06/10/94		29		23.4	24.2%		
08/02/94	1	XL-24	185		5.25	100	16.19	3.50	08/03/94			47.5	43.2	10.0%		

Total Drill Time = 9.04 Hours
Average Penetration Rate = 20.46 Feet / Hour

Total Redrill Time = 5.38 Hours
Average Penetration Rate = 30.67 Feet / Hour

Verticality Information
At Full Depth = 5.0° South X 2.0° East
S-ARC North = 15.05"
S-ARC South = 22.97"

Quality Coring: None.

Comments: Connected with pile 620

Primary Pile #607
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
04/02/94	2	DHD130A	97		3.58			27.09		04/02/94	49			22.7	116.3%	
07/19/94	1	XL-24	185	97	3.33		2.17	26.43	44.70	07/20/94			50.5	43.2	16.9%	

Total Drill Time = 6.91 Hours
Average Penetration Rate = 26.77 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 44.70 Feet / Hour

Verticality Information
At Full Depth = 7.5° South X 3.25° East
S-ARC North = 22.97"
S-ARC South = 32.02"

Quality Coring: None.

Comments:

Secondary Pile #608
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/01/93	2	DHD130A	102		5.17		19.73		11/02/93		123		23.8	416.4%
07/27/94	2	DHD130A	185	102	5.77	5.40	14.38	18.89	07/28/94			48	43.2	11.1%

Total Drill Time = 10.94 Hours
Average Penetration Rate = 16.91 Feet / Hour
Total Redrill Time = 5.40 Hours
Average Penetration Rate = 18.89 Feet / Hour

Verticality Information
At Full Depth = 3.5" South X 3.75" East
S-ARC North = 32.02"
S-ARC South = 20.96"

Quality Coring: None.

Comments:

Primary Pile #609
Area "B"

Area B

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/23/94	1	DHD130A	95		4.42		21.49		04/23/94	32	2.0		22.2	53.3%
07/21/94	1	XL-24	185	95	5.33	1.17	16.89	81.20	07/22/94			51	43.2	18.1%

Total Drill Time = 9.75 Hours
Average Penetration Rate = 18.97 Feet / Hour
Total Redrill Time = 1.17 Hours
Average Penetration Rate = 81.20 Feet / Hour

Verticality Information
At Full Depth = 7.0" South X 7.5" East
S-ARC North = 20.96"
S-ARC South = 33.75"

Quality Coring: None.

Comments:

Secondary Pile #610
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/19/93	1	XL-24	185		9.00			20.56	10/19/93			79	43.2	82.9%
11/30/93	1	XL-24	67						12/04/93			58	30.4	91.1%
12/03/93	1	XL-24	130											

Total Drill Time = 9.00 Hours
Average Penetration Rate = 20.56 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Vertically Information

At Full Depth = 0' North / South X 0' East / West
S-ARC North = 33.75"
S-ARC South = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.

Quality Coring: None.

Comments: 11/30/93 set up on wrong pile and continued on 12-3-93 until mistake was discovered
No redrill payment allowed.
No payment for additional 58 cy of concrete.

Primary Pile #611
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
01/27/94	2	XL-24		185		6.50		28.46		01/28/94			53	43.2	22.7%

Total Drill Time = 6.50 Hours
Average Penetration Rate = 28.46 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Vertically Information

At Full Depth = 11" South X 7.0" West
S-ARC North = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.
S-ARC South = 35.59"

Quality Coring: None.

Comments:

Secondary Pile #612
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/17/93	1	DHD130A	185		15.08		12.27		09/18/93		146		43.2	238.0%
10/20/93	1	XL-24	82		82		3.08		10/20/93		19		19.1	-0.8%
12/09/93	2	DHD130A	80		80		3.58		12/13/93		45.5		18.7	143.6%
01/22/94	2	DHD130A	185		185		11.92		01/24/94			53	43.2	22.7%

Total Drill Time = 15.08 Hours
Average Penetration Rate = 12.27 Feet / Hour

Total Redrill Time = 18.58 Hours
Average Penetration Rate = 18.68 Feet / Hour

Verticality Information
At Full Depth = 2.5° South X 0° East / West
S-ARC North = 35.59"
S-ARC South = 33.07"

Quality Coring: None.

Comments: Hole collapsed to 80' after drilling to 185' initially; cavities in the lower part of hole.

Primary Pile #613
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
01/31/94	2	DHD130A	185		9.08			20.37		02/01/94			47	43.2	8.8%

Total Drill Time = 9.08 Hours
Average Penetration Rate = 20.37 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.5° North X 2.5° East
S-ARC North = 33.07"
S-ARC South = 22.08"

Quality Coring: None.

Comments:

Secondary Pile #614
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/25/93	1	DHD130A	117		9.00		13.00		09/25/93		110		27.3	302.6%
01/13/94	2	DHD130A	185	117	7.17	8.58	9.48	13.64	01/14/94			53.5	43.2	23.8%

Total Drill Time = 16.17 Hours
Average Penetration Rate = 11.44 Feet / Hour

Total Redrill Time = 8.58 Hours
Average Penetration Rate = 13.64 Feet / Hour

Verticality Information
At Full Depth = 0.5" South X 0.75" East
S-ARC North = 22.08"
S-ARC South = 28.53"

Quality Coring: None.

Comments: Encountered clay to approx. 90', then went into rock

Primary Pile #615
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
12/15/93	2	XL-24		185		8.17		22.64	12/17/93			93	43.2	115.3%

Total Drill Time = 8.17 Hours
Average Penetration Rate = 22.64 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0.79" North X 0" East / West
S-ARC North = 28.53"
S-ARC South = 15.87"

Quality Coring: None.

Comments: Hole collapsed to 155', had to clean, probable reason for extra concrete.

Secondary Pile #616
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/29/93	2	DHD130A	110		5.92		18.58		61.5	10/29/93		25.7	139.4%	
01/25/94	2	DHD130A	185	110	5.58	6.58	13.44	16.72		01/26/94	51	43.2	18.1%	

Total Drill Time = 11.50 Hours
Average Penetration Rate = 16.09 Feet / Hour

Total Redrill Time = 6.58 Hours
Average Penetration Rate = 16.72 Feet / Hour

Verticality Information
At Full Depth = 4.8" South X 6.8" West
S-ARC North = 15.87"
S-ARC South = 30.56"

Quality Coring: None.
Comments:

Primary Pile #617
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/08/93	1	DHD130A		95		4.83		19.67	11/08/93		39		22.2	75.8%
01/20/94	2	XL-24		186	95	4.25		21.41	01/20/94			54	43.4	24.3%

Total Drill Time = 9.08 Hours
Average Penetration Rate = 20.48 Feet / Hour

Total Redrill Time = 2.25 Hours
Average Penetration Rate = 42.22 Feet / Hour

Verticality Information
At Full Depth = 1.0" South X 0.5" West
S-ARC North = 30.56"
S-ARC South = 18.62"

Quality Coring: None.
Comments:

Secondary Pile #618
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
10/30/93	87	DHD130A	87		4.50		19.33		11/01/93		45		20.3	121.5%	
06/15/94	110	DHD130A	110	87	1.22	4.28	18.85	20.33	06/16/94		31		25.7	20.7%	
08/09/94	185	XL-24	185	110	3.67	3.92	20.44	28.06	08/10/94			47.5	43.2	10.0%	

Total Drill Time = 9.39 Hours
Average Penetration Rate = 19.70 Feet / Hour

Total Redrill Time = 8.20 Hours
Average Penetration Rate = 24.02 Feet / Hour

Verticality Information
At Full Depth = 5.5" South X 6.0" West
S-ARC North = 18.62"
S-ARC South = 37.84"

Quality Coring: None.

Comments:

Primary Pile #619
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/27/94	1	DHD130A	109		4.78		22.80		04/28/94	30	6		25.5	41.4%
06/29/94	2	XL-24	185	109	3.85	2.57	19.74	42.41	07/01/94			50.5	43.2	16.9%

Total Drill Time = 8.63 Hours
Average Penetration Rate = 21.44 Feet / Hour

Total Redrill Time = 2.57 Hours
Average Penetration Rate = 42.41 Feet / Hour

Verticality Information
At Full Depth = 3.5" North X 7.25" West
S-ARC North = 37.84"
S-ARC South = 11.60"

Quality Coring: None.

Comments:

Secondary Pile #620
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (HRS)							
11/04/93	1	240	63		2.50		25.20			11/04/93				14.7	154.9%
03/15/94	1	DHD30	65	63	0.02	3.33	100.00		18.92	03/15/94	25			15.2	64.7%
06/13/94	2	DHD30	110	65	2.37	1.92	18.99		33.85	06/14/94		30		25.7	16.8%
08/15/94	1	DHD30	185	110	5.88	6.78	12.76		16.22	08/18/94			47	43.2	8.8%

Total Drill Time = 10.77 Hours
Average Penetration Rate = 17.18 Feet / Hour
Total Redrill Time = 12.03 Hours
Average Penetration Rate = 19.78 Feet / Hour

Verticality Information
At Full Depth = 4.0° South X 1.5° West
S-ARC North = 11.60°
S-ARC South = 31.26°

Quality Coring: None.

Comments: Connected with pile 606

Primary Pile #621
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (HRS)							
03/25/94	1	DHD30	96		5.75		16.70			03/25/94	40			22.4	78.4%
07/08/94	1	XL-24	185	96	4.07	2.77	21.87		34.66	07/08/94			48.5	43.2	12.3%

Total Drill Time = 9.82 Hours
Average Penetration Rate = 18.84 Feet / Hour
Total Redrill Time = 2.77 Hours
Average Penetration Rate = 34.66 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 3.5° East
S-ARC North = 31.26°
S-ARC South = 20.39°

Quality Coring: None.

Comments:

Secondary Pile #622
Area "B"

CUT -OFF WALL EXCAVATION										CUT -OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/17/94	1	DHD30	65		2.33			27.90	03/17/94	20			15.2	31.8%
06/16/94	2	DHD30	110	65	2.93		1.74	15.36	06/17/94		28		25.7	9.0%
08/11/94	1	DHD30	185	110	5.50		4.42	13.64	08/12/94			47	43.2	8.8%

Total Drill Time = 10.76 Hours
Average Penetration Rate = 17.19 Feet / Hour

Total Redrill Time = 6.16 Hours
Average Penetration Rate = 28.41 Feet / Hour

Verticality Information
At Full Depth = 4.0" South X 5.25" East
S-ARC North = 20.39"
S-ARC South = 27.45"

Quality Coring: None.

Comments:

Primary Pile #623
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
05/06/94	1	DHD30	107		7.83			13.67		05/06/94	35	5.5		25.0	62.1%
07/13/94	1	XL-24	185	107	4.08		3.08	19.12	34.74	07/13/94			48	43.2	11.1%

Total Drill Time = 11.91 Hours
Average Penetration Rate = 15.53 Feet / Hour

Total Redrill Time = 3.08 Hours
Average Penetration Rate = 34.74 Feet / Hour

Verticality Information
At Full Depth = 3.5" South X 5.75" East
S-ARC North = 27.45"
S-ARC South = 28.13"

Quality Coring: None.

Comments:

Secondary Pile #624
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/19/94	1	DHD30	64		2.75		23.27		03/19/94	23			14.9	53.9%
06/21/94	2	DHD30	110	64	3.78	1.55	12.17	41.29	06/21/94		32		25.7	24.6%
08/22/94	1	DHD30	185	110	4.95	6.30	15.15	17.46	08/23/94			47	43.2	8.8%

Total Drill Time = 11.48 Hours
Average Penetration Rate = 16.11 Feet / Hour

Total Redrill Time = 7.85 Hours
Average Penetration Rate = 22.17 Feet / Hour

Verticality Information
At Full Depth = 2.5" South X 5.0" East
S-ARC North = 28.13"
S-ARC South = 32.99"

Quality Coring: None.

Comments:

Primary Pile #625
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
05/19/94	2	DHD30	105		7.58		13.85		05/20/94	30	3.9		24.5	38.3%	
07/15/94	1	XL-24	185	105	4.08	3.25	19.61	32.31	07/18/94			48	43.2	11.1%	

Total Drill Time = 11.66 Hours
Average Penetration Rate = 15.87 Feet / Hour

Total Redrill Time = 3.25 Hours
Average Penetration Rate = 32.31 Feet / Hour

Verticality Information
At Full Depth = 2.5" North X 2.0" East
S-ARC North = 32.99"
S-ARC South = 26.05"

Quality Coring: None.

Comments:

Secondary Pile #626
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/23/94	1	DHD30	63		2.33		27.04		03/23/94	20			14.7	35.9%	
06/22/94	2	DHD30	105	63	1.67	2.00	25.15	31.50	06/23/94		32		24.5	30.5%	
08/24/94	1	DHD30	185	105	4.17	4.75	19.18	22.11	08/25/94			43.5	43.2	0.7%	

Total Drill Time = 8.17 Hours
Average Penetration Rate = 22.64 Feet / Hour

Total Redrill Time = 6.75 Hours
Average Penetration Rate = 24.89 Feet / Hour

Verticality Information
At Full Depth = 2.0° North X 2.0° East
S-ARC North = 26.05"
S-ARC South = 34.31"

Quality Coring: None.
Comments:

Primary Pile #627
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/25/94	1	DHD30	95		4.25		22.35		04/25/94	40	8		22.2	116.4%
07/19/94	1	XL-24	185	95	5.00	95	2.67	35.58	07/20/94			48	43.2	11.1%

Total Drill Time = 9.25 Hours
Average Penetration Rate = 20.00 Feet / Hour

Total Redrill Time = 2.67 Hours
Average Penetration Rate = 35.58 Feet / Hour

Verticality Information
At Full Depth = 8.0° North X 0° East / West
S-ARC North = 34.31"
S-ARC South = 11.26°

Quality Coring: None.
Comments:

Secondary Pile #628
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/21/94	1	DHD30	64		2.17		29.49		03/22/94	20			14.9	33.8%	
06/30/94	2	DHD30	109		5.75		7.83	0.67	07/01/94		28.5		25.5	12.0%	
08/09/94	1	XL-24	185		4.78		15.90	4.05	08/09/94			48.5	43.2	12.3%	

Total Drill Time = 12.70 Hours
Average Penetration Rate = 14.57 Feet / Hour

Total Redrill Time = 4.72 Hours
Average Penetration Rate = 36.65 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 3.0° West
S-ARC North = 11.26°
S-ARC South = 29.87°

Quality Coring: None.
Comments:

Primary Pile #629
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/31/94	1	DHD30	95		5.08		18.70		04/01/94	47	2			22.2	120.9%
07/22/94	1	XL-24	185	95	4.50		20.00	3.83	07/25/94				49	43.2	13.4%

Total Drill Time = 9.58 Hours
Average Penetration Rate = 19.31 Feet / Hour

Total Redrill Time = 3.83 Hours
Average Penetration Rate = 24.80 Feet / Hour

Verticality Information
At Full Depth = 2.5° North X 0° East / West
S-ARC North = 29.87°
S-ARC South = 14.22°

Quality Coring: None.
Comments:

Secondary Pile #630
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
03/18/94	1	DHD130A	64		2.08		30.77			03/18/94	28			14.9	87.4%	
06/24/94	2	DHD130A	110	64	2.48	1.60	18.55	40.00		06/24/94		37.5		25.7	46.0%	
08/17/94	1	DHD130A	185	110	6.83	6.42	10.98	17.13		08/18/94			47	43.2	8.8%	

Total Drill Time = 11.39 Hours
Average Penetration Rate = 16.24 Feet / Hour

Total Redrill Time = 8.02 Hours
Average Penetration Rate = 21.70 Feet / Hour

Verticality Information
At Full Depth = 3.5" South X 8.0" East
S-ARC North = 14.22"
S-ARC South = 20.93"

Quality Coring: None.

Comments:

Primary Pile #631
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
04/22/94	1	DHD130A	80		4.00		20.00		04/22/94	32				18.7	71.3%	
06/08/94	2	DHD130A	110	80	7.62	1.88	3.94	42.55	06/08/94	50	2.0			25.7	102.4%	
08/02/94	1	XL-24	185	110	4.83	3.25	15.53	33.85	08/04/94			51		43.2	18.1%	

Total Drill Time = 16.45 Hours
Average Penetration Rate = 11.25 Feet / Hour

Total Redrill Time = 5.13 Hours
Average Penetration Rate = 37.04 Feet / Hour

Verticality Information
At Full Depth = 5.0" South X 19" East
S-ARC North = 20.93"
S-ARC South = 26.67"

Quality Coring: None.

Comments: Connected with piles 609, 621 & 631; Hole collapsed to 60'.

Secondary Pile #632

Area "B"

CUT-OFF WALL EXCAVATION

CUT-OFF WALL CONSTRUCTION

Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/16/94	1	DHD130A	65		2.08		31.25		03/16/94	74			15.2	387.5%
05/23/94	2	DHD130A	80	65	1.95	1.88	7.69	34.57	05/25/94	22.5	3.5		18.7	39.2%
06/27/94	2	DHD130A	110	80	0.85	1.48	35.29	54.05	06/27/94		32		25.7	24.6%
08/12/94	1	XL-24	185	110	3.92	4.42	19.13	24.89	08/12/94			47	43.2	8.8%

Total Drill Time = 8.80 Hours
Average Penetration Rate = 21.02 Feet / Hour
Total Redrill Time = 7.78 Hours
Average Penetration Rate = 32.78 Feet / Hour

Verticality Information
At Full Depth = 2.0° South X 7.25° East
S-ARC North = 26.67°
S-ARC South = 20.93°

Quality Coring: None.

Comments: cavities 45-65'

Primary Pile #633

Area "B"

Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
03/30/94	1	DHD130A	74		3.25		22.77		03/30/94	25	2.1		17.3	56.8%	
06/01/94	2	DHD130A	110	74	4.12	1.22	8.74	60.66	06/01/94	30	3.0		25.7	28.5%	
07/20/94	1	XL-24	185	110	3.83	2.58	19.58	42.64	07/21/94			48.5	43.2	12.3%	

Total Drill Time = 11.20 Hours
Average Penetration Rate = 16.52 Feet / Hour
Total Redrill Time = 3.80 Hours
Average Penetration Rate = 48.42 Feet / Hour

Verticality Information
At Full Depth = 2.0° North X 12° West
S-ARC North = 20.93°
S-ARC South = 15.72°

Quality Coring: None.

Comments: Cavity 66 to 94'

Secondary Pile #634
Area "B"

Area 'B'

CUT-OFF WALL EXCAVATION							CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/14/94	1	DHD130A	42		1.58		26.58		03/14/94	76			9.8	674.9%
03/19/94	1	DHD130A	64	42	0.90	1.33	24.44	31.58	03/19/94	22	8		14.9	100.7%
05/06/94	1	DHD130A	85	64	0.95	2.38	22.11	26.89	05/06/94	30	8.0		19.8	91.4%
06/29/94	2	DHD130A	110	85	1.58	1.58	15.82	53.80	06/29/94		31		25.7	20.7%
08/22/94	1	DHD130A	185	110	4.25	4.67	17.65	23.55	08/23/94			47	43.2	8.8%

Total Drill Time = 9.26 Hours
Average Penetration Rate = 19.98 Feet / Hour
Total Redrill Time = 9.96 Hours
Average Penetration Rate = 30.22 Feet / Hour

Verticality Information
At Full Depth = 1.5" South X 1.0" East
S-ARC North = 15.72"
S-ARC South = 20.70"

Quality Coring: None.

Comments: Connection with ditch during grouting, approx. 15' away.

Primary Pile #635
Area "B"

CUT-OFF WALL EXCAVATION

CUT-OFF WALL CONSTRUCTION

Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/24/94	1	DHD130A	96		4.92		19.51		03/24/94	25			22.4	11.5%
08/05/94	1	XL-24	185	96	3.95	2.88	22.53	33.33	08/08/94			51	43.2	18.1%

Total Drill Time = 8.87 Hours
Average Penetration Rate = 20.86 Feet / Hour
Total Redrill Time = 2.88 Hours
Average Penetration Rate = 33.33 Feet / Hour

Verticality Information
At Full Depth = 4.5" South X 8.0" East
S-ARC North = 20.70"
S-ARC South = 29.59"

Quality Coring: None.

Comments:

Secondary Pile #636

Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/21/93	1	XL-24	64		8.75		7.31		10/22/93		36.5		14.9	144.2%
12/10/93	2	DHD130A	185	64		7.50	8.53		12/13/93		64		43.2	48.1%
07/06/94	1	DHD130A	185	185		10.08	18.35		07/07/94			55	43.2	27.3%

Total Drill Time = 8.75 Hours
Average Penetration Rate = 21.14 Feet / Hour
Total Redrill Time = 17.58 Hours
Average Penetration Rate = 14.16 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 2.0° West
S-ARC North = 29.59°
S-ARC South = 24.19°

Quality Coring: None.

Comments: Tremie plate fell into hole at 185'

Primary Pile #637

Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
01/22/94	2	XL-24	120		5.75		20.87			01/22/94		24		28.0	-14.4%
08/01/94	1	DHD130A	185	120	5.17	6.83	12.57	17.57		08/02/94			47	43.2	8.8%

Total Drill Time = 10.92 Hours
Average Penetration Rate = 16.94 Feet / Hour
Total Redrill Time = 6.83 Hours
Average Penetration Rate = 17.57 Feet / Hour

Verticality Information
At Full Depth = 1.5° South X 1.5° East
S-ARC North = 24.19°
S-ARC South = 28.15°

Quality Coring: None.

Comments: Lost rotary bucket cap in hole.

Secondary Pile #638
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
10/16/94	1	XL-24	185		7.88		23.48		43.5%

Total Drill Time = 7.88 Hours
Average Penetration Rate = 23.48 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0.5' South X 1.0' East
S-ARC North = 28.15"
S-ARC South = 28.31"

Quality Coring: None.

Comments: Cavity 50 - 60' deep

Primary Pile #639
Area "C"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
11/29/93	1	DHD130A	185		10.08		18.35		13.4%

Total Drill Time = 10.08 Hours
Average Penetration Rate = 18.35 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0.75' North X 1.5' West
S-ARC North = 28.31"
S-ARC South = 26.58"

Quality Coring: None.

Comments:

Secondary Pile #640
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
10/11/93	1	DHD130A	185		16.58		11.16		10/12/93		114			43.2	163.9%
11/13/93	1	DHD130A	185	185		12.25		15.10	11/13/94				52	43.2	20.4%

Total Drill Time = 16.58 Hours
Average Penetration Rate = 11.16 Feet / Hour

Total Redrill Time = 12.25 Hours
Average Penetration Rate = 15.10 Feet / Hour

Verticality Information
At Full Depth = 1.0° North X 2.75° East
S-ARC North = 26.58°
S-ARC South = 28.48°

Quality Coring: None.

Comments: 10/12/93 drilled to 185' down staged to 100'; caved in to 128'.

Primary Pile #641
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
11/19/93	1	XL-24	185		6.92		26.73		11/20/93				48.5	43.2	12.3%

Total Drill Time = 6.92 Hours
Average Penetration Rate = 26.73 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.25° North X 3.0° East
S-ARC North = 28.48°
S-ARC South = 23.33°

Quality Coring: None.

Comments: Cavity 40 - 46'.

Secondary Pile #642
Area "C"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Overbreak
10/06/93	1	DHD130A	185		15.66		11.81		80.6%

Total Drill Time = 15.66 Hours
Average Penetration Rate = 11.81 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° North / South X 1.5° East
S-ARC North = 23.33°
S-ARC South = 24.87°

Quality Coring: None.

Comments:

Primary Pile #643
Area "C"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Overbreak
11/04/93	1	XL-24	185		6.46		28.64		20.4%

Total Drill Time = 6.46 Hours
Average Penetration Rate = 28.64 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.25° South X 0° East / West
S-ARC North = 24.87°
S-ARC South = 29.83°

Quality Coring: None.

Comments:

Secondary Pile #644
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/04/93	1	DHD130A	185		13.67		13.53		10/04/93			57	43.2	31.9%

Total Drill Time = 13.67 Hours
Average Penetration Rate = 13.53 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.0° North X 0.25° West
S-ARC North = 29.83°
S-ARC South = 34.14°

Quality Coring: None.

Comments:

Primary Pile #645
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/01/93	2	XL-24	185		7.09		26.09		11/01/93			49	43.2	13.4%

Total Drill Time = 7.09 Hours
Average Penetration Rate = 26.09 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 6.75° North X 0° East / West
S-ARC North = 34.14°
S-ARC South = 14.77°

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/29/93	1	DHD130A	185		28.84			6.41	09/29/93			50.5	43.2	16.9%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile #647
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/11/93	1	DHD130A	185		19.17		9.65		11/11/93			51.5	43.2	19.2%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Secondary Pile #648
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/24/93	1	DHD130A	185		17.59		10.52		09/27/93			57	43.2	31.9%

Total Drill Time = 17.59 Hours
Average Penetration Rate = 10.52 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.25" North X 0" East / West
S-ARC North = 31.08"
S-ARC South = 27.78"

Quality Coring: None.

Comments: Connected with piles 612, 582, 552 & 532

Primary Pile #649
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
11/09/93	1	DHD130A	185		13.67		13.53		11/09/93			47.5	43.2	10.0%	

Total Drill Time = 13.67 Hours
Average Penetration Rate = 13.53 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.0" North X 1.0" East
S-ARC North = 27.78"
S-ARC South = 23.76"

Quality Coring: None.

Comments:

Secondary Pile #650
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
09/30/93	1	DHD130A	185		13.83		13.38		10/01/93			49	43.2	13.4%	

Total Drill Time = 13.83 Hours
Average Penetration Rate = 13.38 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° North / South X 0° East / West
S-ARC North at 185' = 23.76"
S-ARC North at 130' = 26.76"
S-ARC South = 24.24"

Quality Coring: None.

Comments:

Primary Pile #651
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Grout (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
10/28/93	2	240	130		6.50		20.00			10/28/93		35	30.4	15.3%	

Total Drill Time = 6.50 Hours
Average Penetration Rate = 20.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5° South X 3.25° West
S-ARC North = 24.24"
S-ARC South = 30.41"

Quality Coring: None.

Comments:

Secondary Pile #652
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Fig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/08/93	1	DHD130A	130		10.66		12.20		10/08/93			36	30.4	18.6%

Total Drill Time = 10.66 Hours
Average Penetration Rate = 12.20 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.0" North X 2.5" East
S-ARC North = 30.41"
S-ARC South = 24.03"

Quality Coring: None.

Comments:

Primary Pile #653
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/01/93	2	XL-24	130		5.67		22.93		11/01/93			35	30.4	15.3%

Total Drill Time = 5.67 Hours
Average Penetration Rate = 22.93 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0.5" North X 1.75" West
S-ARC North = 24.03"
S-ARC South = 28.14"

Quality Coring: None.

Comments:

Secondary Pile #654
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/14/93	1	DHD130A	130		15.83			8.21		10/14/93		35	30.4	15.3%

Secondary Pile #656
Area "C"

CUT-OFF WALL EXCAVATION														CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
10/18/93	1	XL-24	130		6.50		20.00		10/18/93			36	30.4	18.6%					

Total Drill Time = 6.50 Hours
Average Penetration Rate = 20.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0' North / South X 0' East / West
S-ARC North = 27.79"
S-ARC South = 19.80"

Quality Coring: None.

Comments:

Primary Pile #657
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
10/29/93	2	DHD130A	130		9.75		13.33		10/30/93			35	30.4	15.3%	

Total Drill Time = 9.75 Hours
Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 4.25' South X 2.75' West
S-ARC North = 19.80"
S-ARC South = 33.62"

Quality Coring: None.

Comments:

Secondary Pile #658
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
10/27/93	2	DHD130A	130		8.16			15.93		10/27/93			35	30.4	15.3%

Total Drill Time = 8.16 Hours
Average Penetration Rate = 15.93 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 1.25' North X 0' East / West
S-ARC North = 33.62"
S-ARC South = 24.87"

Quality Coring: None.

Comments:

Primary Pile #659
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)								
11/10/93	1	240	130		9.50			13.68		11/10/93			35	30.4	15.3%	

Total Drill Time = 9.50 Hours
Average Penetration Rate = 13.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0' North / South X 1.5' West
S-ARC North = 24.87"
S-ARC South = 26.76"

Quality Coring: None.

Comments:

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/26/93	2	XL-24		130		6.50		20.00				35.5	30.4	16.9%

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/08/93	1	240	130		6.81		19.09		11/08/93			37.5	30.4	23.5%

Comments:

Secondary Pile #662
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
10/25/93	2	XL-24	130		6.83			19.03		10/25/93			35	30.4	15.3%

Total Drill Time = 6.83 Hours
Average Penetration Rate = 19.03 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° North / South X 2.5° East
S-ARC North = 26.70°
S-ARC South = 26.58°

Quality Coring: None.

Comments: Cavity 59-63'

Primary Pile #663
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)							
11/02/93	2	DHD130A	130		9.08			14.32		11/02/93			35	30.4	15.3%

Total Drill Time = 9.08 Hours
Average Penetration Rate = 14.32 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° North / South X 0° East / West
S-ARC North = 26.58°
S-ARC South = 25.27°

Quality Coring: None.

Comments:

Secondary Pile #664
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/21/93	2	DHD130A	130		9.34		13.92		10/21/93			36	30.4	18.6%

Total Drill Time = 9.34 Hours
Average Penetration Rate = 13.92 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.0° South X 1.0° West
S-ARC North = 25.27°
S-ARC South = 28.84°

Quality Coring: None.

Comments:

Primary Pile #665
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/04/93	1	XL-24	130		4.37		29.75		11/04/93			35	30.4	15.3%

Total Drill Time = 4.37 Hours
Average Penetration Rate = 29.75 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0.5° North X 1.5° West
S-ARC North = 28.84°
S-ARC South = 27.05°

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/19/93	2	240	130		7.75		16.77		10/19/93			38	30.4	25.2%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile #667
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)						
12/04/93	1	DHD130A	130		8.67		14.99		12/04/93			34.5	30.4	13.6%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Secondary Pile #668
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
10/16/93	1	240	130		10.00		13.00			10/16/93			36	30.4	18.6%
11/15/93	1	DHD130A	130	130		7.50	17.33			11/15/93			35	30.4	15.3%

Total Drill Time = 10.00 Hours
Average Penetration Rate = 13.00 Feet / Hour

Total Redrill Time = 7.50 Hours
Average Penetration Rate = 17.33 Feet / Hour

Verticality Information
At Full Depth = 0.75" South X 2.25" East
S-ARC North = 27.88"
S-ARC South = 33.14"

Quality Coring: None.

Comments: Caved in to 90' on 10/16/93; cavity 38--55'.

Primary Pile #669
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/20/93	1	XL-24	62		1.97		31.47		11/20/93	12	8		14.5	38.1%
11/29/93	1	DHD130A	130	62	4.25	2.92	16.00	21.23	11/29/93			35	30.4	15.3%

Total Drill Time = 6.22 Hours
Average Penetration Rate = 20.90 Feet / Hour

Total Redrill Time = 2.92 Hours
Average Penetration Rate = 21.23 Feet / Hour

Verticality Information
At Full Depth = 4.75" North X 2.5" West
S-ARC North = 33.14"
S-ARC South = 24.42"

Quality Coring: None.

Comments:

Secondary Pile #670
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/13/93	1	DHD130A	130		15.66		8.30		10/13/93			36.5	30.4	20.2%

Total Drill Time = 15.66 Hours
Average Penetration Rate = 8.30 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.28" North X 0" East / West
S-ARC North = 24.42"
S-ARC South = 26.37"

Quality Coring: None.

Comments:

Primary Pile #671
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/28/93	2	240	130		6.67		19.49		10/28/93			35	30.4	15.3%

Total Drill Time = 6.67 Hours
Average Penetration Rate = 19.49 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.0" North X 0.5" West
S-ARC North = 26.37"
S-ARC South = 24.51"

Quality Coring: None.

Comments:

Secondary Pile #672
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/08/93	1	DHD130A	130		16.92		7.68		10/11/93			39.5	30.4	30.1%

Total Drill Time = 16.92 Hours
Average Penetration Rate = 7.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" North X 2.0" West
S-ARC North = 24.51"
S-ARC South = 25.27"

Quality Coring: None.

Comments:

Primary Pile #673
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/30/93	2	XL-24	130		5.97		21.78		11/01/93			35	30.4	15.3%

Total Drill Time = 5.97 Hours
Average Penetration Rate = 21.78 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0.75" North X 1.75" East
S-ARC North = 25.27"
S-ARC South = 25.58"

Quality Coring: None.

Comments:

Secondary Pile #674
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/07/93	1	DHD130A	130		11.17		11.64		10/07/93			34	30.4	12.0%

Total Drill Time = 11.17 Hours
Average Penetration Rate = 11.64 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0' North / South X 0' East / West
S-ARC North = 25.58"
S-ARC South = 32.98"

Quality Coring: None.

Comments:

Primary Pile #675
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/03/93	1	DHD130A	130		8.55		15.20		11/03/93			35	30.4	15.3%

Total Drill Time = 8.55 Hours
Average Penetration Rate = 15.20 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 6.0' North X 6.75' West
S-ARC North = 32.98"
S-ARC South = 19.12"

Quality Coring: None.

Comments:

Secondary Pile #676
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/28/93	1	DHD130A	130		11.25		11.56		09/28/93			35	30.4	15.3%

Total Drill Time = 11.25 Hours
Average Penetration Rate = 11.56 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.0" North X 0" East / West
S-ARC North = 19.12"
S-ARC South = 26.35"

Quality Coring: None.

Comments:

Primary Pile #677
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/29/93	2	DHD130A	130		9.33		13.93		10/29/93			35	30.4	15.3%

Total Drill Time = 9.33 Hours
Average Penetration Rate = 13.93 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.75" North X 0" East / West
S-ARC North = 26.35"
S-ARC South = 24.15"

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)					
09/24/93	1	DHD130A	130		9.75		13.33		09/24/93		35	30.4	15.3%

Total Redrill Time = None

Quality Coring: None.

Primary Pile #679
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/27/93	2	DHD130A	130		10.00		13.00		10/27/93			35	30.4	15.3%

Total Redrill Time =

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)				
09/30/93	1	DHD130A	130		9.16		14.19		09/30/93	35	30.4	15.3%

Verticality Information	1.0" South X 1.5" East
At Full Depth =	
S-ARC North =	24.42"
S-ARC South =	29.28"

Comments:

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)					
10/26/93	2	XL-24		130		5.00		26.00	10/26/93			32	5.4%
11/13/93	1	DHD130A		124	124		9.59	12.93	11/13/93			35	20.9%

1.0" North X 1.25" West

At Full Depth = 29.28"

S--ARC North = 27.48"

S--ARC South =

Comments: Verticality cage in hole. Cavity developed on platform; backfilled with 35 cy concrete.

CUT - OFF WALL EXCAVATION				CUT - OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/02/93	1	DHD130A	130		7.75		16.77		10/04/93			35	30.4	15.3%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Primary Pile #683
Area "C"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)						
10/23/93	2	240	130		7.08		18.36	10/23/93			35	30.4	15.3%

Total Redrill Time =

Average Penetration Rate =

None

Quality Coring: None.

Comments:

Area C

CLUT-OFF WALL CONSTRUCTION

Total Redrill Time =
Average Penetration Rate =
None

Verticality Information

At Full Depth =	0° North / South X 1.75" West
S-ARC North =	26.67"
S-ARC South =	28.09"

Quality Coring: None.

Comments:

Area "C"

CUT-OFF WALL CONSTRUCTION

Total Redrill Time =
Average Penetration Rate =
None

Vertically Information

At Full Depth =	1.0" North X 0.25" West
S-ARC North =	28.09"
S-ARC South =	25.08"

Quality Coring: None.

Comments:

Secondary Pile #686
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/07/93	1	DHD130A	130		12.50		10.40		10/07/93			34	30.4	12.0%

Total Drill Time = 12.50 Hours
Average Penetration Rate = 10.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° North / South X 2.5° East
S-ARC North = 25.08°
S-ARC South = 22.00°

Quality Coring: None.

Comments:

Primary Pile #687
Area "C"

Area C

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/21/94	1	DHD130A	130		4.67		27.84		01/21/94			35.5	30.4	16.9%

Total Drill Time = 4.67 Hours
Average Penetration Rate = 27.84 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.0° South X 0° East / West
S-ARC North = 22.00°
S-ARC South = 30.59°

Quality Coring: None.

Comments:

Secondary Pile #688

Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Overbreak
10/09/93	1	DHD130A	130		9.45		13.76	17.14	-80.2%
12/17/93	1	DHD130A	30	30		1.75		30	328.2%
01/12/94	1	DHD130A	130	130		2.66	48.87		20.2%

Total Drill Time = 9.45 Hours
Average Penetration Rate = 13.76 Feet / Hour
Total Redrill Time = 4.41 Hours
Average Penetration Rate = 36.28 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 2.5° East
S-ARC North = 30.59"
S-ARC South = 20.71"

Quality Coring: None.

Comments: Hole caved in to 22' after drilling to 130' on 10/9/93. Placed 6cy of concrete
Hole connected with hole 672

Primary Pile #689

Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Overbreak
01/24/94	1	DHD130A	64		2.91		21.99		7.1%
02/11/94	1	XL-24	130	64	2.80	2.25	23.57	28.44	13.6%
02/23/94	2	DHD130A	130		7.00				13.6%

Total Drill Time = 5.71 Hours
Average Penetration Rate = 22.77 Feet / Hour
Total Redrill Time = 2.25 Hours
Average Penetration Rate = 28.44 Feet / Hour

Verticality Information
At Full Depth = 3.5° South X 2.0° West
S-ARC North = 20.71"
S-ARC South = 31.29"

Quality Coring: None.

Comments: Hole redrilled accidentally by contractor on 2/23/94

Secondary Pile #690
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time				Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)								
10/15/93	1	DHD130A	94		5.88			15.99		10/15/93		25		22.0	13.9%	
01/31/94	1	DHD130A	130	94	2.00	3.35		18.00	28.06	02/01/94			34.5	30.4	13.6%	

Total Drill Time = 7.88 Hours
Average Penetration Rate = 16.50 Feet / Hour

Total Redrill Time = 3.35 Hours
Average Penetration Rate = 28.06 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 0° East / West
S-ARC North = 31.29°
S-ARC South = 21.92°

Quality Coring: None.

Comments: 10/15/93 depth of concrete placement = 30'; sinkhole developed took 23 cy on upstream, 2nd sinkhole on downstream side of rig took 29 cy.

Primary Pile #691
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
01/26/94	1	DHD130A		60		3.17		18.93	01/27/94		16		14.0	14.2%	
02/15/94	2	XL-24		130	60	1.92	4.08	36.46	02/16/94			36	30.4	18.6%	

Total Drill Time = 5.09 Hours
Average Penetration Rate = 25.54 Feet / Hour

Total Redrill Time = 4.08 Hours
Average Penetration Rate = 14.71 Feet / Hour

Verticality Information
At Full Depth = 3.0° South X 3.0° West
S-ARC North = 21.92°
S-ARC South = 29.16°

Quality Coring: None.

Comments:

Secondary Pile #692
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
01/24/94	1	DHD130A	65		3.16			20.57	01/24/94	60			15.2	295.3%	
02/03/94	1	XL-24	130	65	2.87	0.97		22.65	02/04/94			36.5	30.4	20.2%	

Total Drill Time = 6.03 Hours
Average Penetration Rate = 21.56 Feet / Hour

Total Redrill Time = 0.97 Hours
Average Penetration Rate = 67.01 Feet / Hour

Verticality Information
At Full Depth = 1.0° South X 0.25° East
S-ARC North = 29.16"
S-ARC South = 28.70"

Quality Coring: None.

Comments: Connected with pile 717. Both holes 692 & 717 filled simultaneously with grout - 60 cy total.

Primary Pile #693
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
01/28/94	1	DHD130A	63		2.62		24.05			01/29/93	18			14.7	22.4%
02/22/94	2	XL-24	130	63	2.90	1.60	23.10	39.38		02/22/94			34.5	30.4	13.6%

Total Drill Time = 5.52 Hours
Average Penetration Rate = 23.55 Feet / Hour

Total Redrill Time = 1.60 Hours
Average Penetration Rate = 39.38 Feet / Hour

Verticality Information
At Full Depth = 0.5° North X 2.5° East
S-ARC North = 28.70"
S-ARC South = 26.01"

Quality Coring: None.

Comments: 1/29/93 18 cu. yds. in pile, 48 cu. yds. for platform collapse, near pile 695 upstream of wall.

Secondary Pile #694
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/25/94	1	DHD130A	59		4.92		11.99		01/26/94	18			13.8	30.6%
02/15/94	1	XL-24	130	59	3.97	1.78	17.88	33.15	02/15/94			34	30.4	12.0%

Total Drill Time = 8.89 Hours
Average Penetration Rate = 14.62 Feet / Hour

Total Redrill Time = 1.78 Hours
Average Penetration Rate = 33.15 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 1.5° East
S-ARC North = 26.01°
S-ARC South = 23.70°

Quality Coring: None.

Comments:

Primary Pile #695
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/02/94	1	DHD130A	60		3.50			17.14	02/02/94	16			14.0	14.2%
02/26/94	2	XL-24	130	60	2.92	1.58		23.97	02/26/94			36.5	30.4	20.2%

Total Drill Time = 6.42 Hours
Average Penetration Rate = 20.25 Feet / Hour

Total Redrill Time = 1.58 Hours
Average Penetration Rate = 37.97 Feet / Hour

Verticality Information
At Full Depth = 1.75° South X 2.5° West
S-ARC North = 23.70°
S-ARC South = 26.49°

Quality Coring: None.

Comments:

Secondary Pile #696
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/27/94	1	DHD130A	44		3.27		13.46		01/28/94	12			10.3	16.8%
02/18/94	2	DHD130A	130	44	5.83	1.92	14.75	22.92	02/18/94			35	30.4	15.3%

Total Drill Time = 9.10 Hours
Average Penetration Rate = 14.29 Feet / Hour

Total Redrill Time = 1.92 Hours
Average Penetration Rate = 22.92 Feet / Hour

Verticality Information
At Full Depth = 1.75" South X 0.5" East
S-ARC North = 26.49"
S-ARC South = 26.30"

Quality Coring: None.

Comments: Connected with pile 720

Primary Pile #697
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
02/11/94	1	DHD130A	59		4.00		14.75		02/11/94	20			13.8	45.2%	
03/02/94	2	DHD130A	130	59	4.71	3.12	15.07	18.91	03/03/94			34.5	30.4	13.6%	

Total Drill Time = 8.71 Hours
Average Penetration Rate = 14.93 Feet / Hour

Total Redrill Time = 3.12 Hours
Average Penetration Rate = 18.91 Feet / Hour

Verticality Information
At Full Depth = 0.5" South X 2.0" West
S-ARC North = 28.30"
S-ARC South = 33.84"

Quality Coring: None.

Comments:

Secondary Pile #698
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
02/03/94	1	DHD130A	60		5.08			11.81	02/03/94	16			14.0	14.2%	
02/23/94	2	XL-24	130	60	3.40	0.93	20.59	64.52	02/23/94			35.5	30.4	16.9%	

Total Drill Time = 8.48 Hours
Average Penetration Rate = 15.33 Feet / Hour

Total Redrill Time = 0.93 Hours
Average Penetration Rate = 64.52 Feet / Hour

Vertically Information
At Full Depth = 5.0' North X 3.0' West
S--ARC North = 33.84"
S--ARC South = 20.38"

Quality Coring: None.

Comments:

Primary Pile #699
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
02/14/94	1	DHD130A	54		3.17		17.03			02/14/94	15			12.6	19.0%
02/28/94	2	DHD130A	130	54	4.60	2.07	16.52	26.09		03/01/94			32.5	30.4	7.1%

Total Drill Time = 7.77 Hours
Average Penetration Rate = 16.73 Feet / Hour

Total Redrill Time = 2.07 Hours
Average Penetration Rate = 26.09 Feet / Hour

Vertically Information
At Full Depth = 1.0' North X 1.0' West
S--ARC North = 20.38"
S--ARC South = 26.04"

Quality Coring: None.

Comments:

Secondary Pile #700
Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Theoretical Volume (CU.YD.)
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
02/05/94	1	DHD130A	62		6.58		9.42		14.5
02/22/94	2	DHD130A	131	62	4.58	2.58	15.07	24.03	30.6

Total Drill Time = 11.16 Hours
Average Penetration Rate = 11.74 Feet / Hour

Total Redrill Time = 2.58 Hours
Average Penetration Rate = 24.03 Feet / Hour

Verticality Information
At Full Depth = 0.5" North X 1.5" West
S-ARC North = 26.04"
S-ARC South = 29.45"

Quality Coring: None.

Comments:

Primary Pile #701
Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Theoretical Volume (CU.YD.)
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
02/16/94	2	XL-24	65		3.80		17.11		15.2
02/26/94	2	DHD130A	130	65	5.30	3.20	12.26	20.31	30.4

Total Drill Time = 9.10 Hours
Average Penetration Rate = 14.29 Feet / Hour

Total Redrill Time = 3.20 Hours
Average Penetration Rate = 20.31 Feet / Hour

Verticality Information
At Full Depth = 2.5" North X 0.5" West
S-ARC North = 29.45"
S-ARC South = 26.02"

Quality Coring: None.

Comments:

Secondary Pile #702
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/18/93	2	240	31		1.00		31.00		10/19/93		13		7.2	79.6%
02/03/94	1	DHD130A	33	31	0.17	1.50	11.76	20.67	02/04/94	30			7.7	289.3%
02/19/94	2	DHD130A	130	33	5.37	1.22	18.06	27.05	02/19/94			35	30.4	15.3%

Total Drill Time = 6.54 Hours
Average Penetration Rate = 19.88 Feet / Hour

Total Redrill Time = 2.72 Hours
Average Penetration Rate = 23.53 Feet / Hour

Verticality Information
At Full Depth = 2.0" North X 0.5" East
S-ARC North = 26.02"
S-ARC South = 22.98"

Quality Coring: None.

Comments: Connected with pile 709, both piles 702 & 709 filled simultaneously with grout

Primary Pile #703
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
02/11/94	1	DHD130A	52		4.58		11.35			02/11/94	25			12.1	105.9%
03/03/94	2	DHD130A	130	52	6.00	3.00	13.00	17.33		03/04/94			32	30.4	5.4%

Total Drill Time = 10.58 Hours
Average Penetration Rate = 12.29 Feet / Hour

Total Redrill Time = 3.00 Hours
Average Penetration Rate = 17.33 Feet / Hour

Verticality Information
At Full Depth = 0.5" South X 0" East / West
S-ARC North = 22.98"
S-ARC South = 23.81"

Quality Coring: None.

Comments:

Secondary Pile #704
Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/13/94	1	DHD130A	44		6.17		7.13		10/13/94		18		10.3	75.2%
02/02/94	1	DHD130A	27	27		1.42	19.01	19.01	02/02/94	24			6.3	280.7%
02/15/94	2	XL-24	65	44	1.17	0.83	17.95	53.01	02/15/94	25			15.2	64.7%
02/23/94	2	XL-24	130	65	2.84	1.00	22.89	65.00	02/23/94			36	30.4	18.6%

Secondary Pile #706
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/29/93	1	DHD130A	130		12.92		10.06		09/30/93			35	30.4	15.3%

Total Drill Time = 12.92 Hours
Average Penetration Rate = 10.06 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

Verticality Information

At Full Depth =	1.0" South X 1.0" West
S-ARC North =	25.27"
S-ARC South =	25.29"

Quality Coring: None.

Comments:

Primary Pile #707
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/26/94	1	DHD130A	57		5.41			10.54	01/27/94	11			13.3	-17.4%
02/26/94	2	XL-24	130	57	2.90	1.27	25.17	44.88	02/26/94			33	30.4	8.7%

Total Drill Time = 8.31 Hours
Average Penetration Rate = 15.64 Feet / Hour

Total Redrill Time = 1.27 Hours
Average Penetration Rate = 44.88 Feet / Hour

Vertically Information	
At Full Depth =	2.0' South X 0" East / West
S--ARC North =	25.29'
S--ARC South =	28.83'

Quality Coring: None.

Comments:

Area "D"

Comments:

Area "D"

Comments: Cavity at 25'. Connected with pile 702 while grouting on 02/04/94

Secondary Pile #710
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/01/93	1	DHD130A	130		22.59		5.75		10/02/93			35	30.4	15.3%

Total Drill Time = 22.59 Hours
Average Penetration Rate = 5.75 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0.5" South X 0" East / West
S-ARC North = 23.00"
S-ARC South = 25.30"

Quality Coring: None.
Comments:

Primary Pile #711
Area "D"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/24/94	1	DHD130A	61		4.08		14.95		01/25/94	20			14.2	40.4%
02/01/94	1	DHD130A	130	61	6.33	2.83	10.90	21.55	02/01/94			32.5	30.4	7.1%

Total Drill Time = 10.41 Hours
Average Penetration Rate = 12.49 Feet / Hour
Total Redrill Time = 2.83 Hours
Average Penetration Rate = 21.55 Feet / Hour

Verticality Information
At Full Depth = 1.5" South X 0" East / West
S-ARC North = 25.30"
S-ARC South = 24.49"

Quality Coring: None.
Comments:

Secondary Pile #712

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/05/93	1	DHD130A	130		17.33		7.50		10/05/93			36.5	30.4	20.2%

Total Drill Time = 17.33 Hours

Average Penetration Rate = 7.50 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

Verticality Information

At Full Depth =	3.0" South X 1.5" West
S-ARC North =	24.49"
S-ARC South =	30.75"

Quality Coring: None.

Comments:

Primary Pile #713

CUT-OFF WALL EXCAVATION

CUT-OFF WALL CONSTRUCTION

Area "D"

Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (ET / HR)	Redrill (FT / HR)						
02/04/94	1	DHD130A	44		2.50		17.60		02/08/94	8.2			10.3	-20.2%
02/21/94	2	DHD130A	38			2.00		19.00	02/21/94	25			8.9	181.7%
02/24/94	2	DHD130A	66		0.80	1.03	27.50	42.72	02/24/94	25			15.4	62.2%
03/08/09	2	XL-24	130		2.58	1.33	24.81	49.62	03/10/94			34.5	30.4	13.6%

Total Drill Time = 5.88 Hours
Average Penetration Rate = 22.11 Feet / Hour

Total Redrill Time = 4.36 Hours
Average Penetration Rate = 33.94 Feet / Hour

Verticality Information

At Full Depth =	0° North / South X 0.25" West
S-ARC North =	30.75"
S-ARC South =	25.21"

Quality Coring: None.

Comments: Connected with pile 719

Secondary Pile #714
Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
10/06/93	1	DHD130A	50		3.75		13.33		
10/19/93	2	DHD130A	123	50	6.58	4.17	11.09		11.99
01/22/94	1	DHD130A	27	27		1.50			18.00
01/27/94	1	DHD130A	46	46		1.83			25.14
02/12/94	1	XL-24	55	55		1.58			34.81
02/28/94	1	XL-24	130	123	1.25	6.25	5.60		19.68
Total Drill Time = 11.58 Hours									
Average Penetration Rate = 11.23 Feet / Hour									
Total Redrill Time = 15.33 Hours									
Average Penetration Rate = 19.63 Feet / Hour									
Verticality Information									
At Full Depth = 1.0° South X 1.5° East									
S-ARC North = 25.21"									
S-ARC South = 31.77"									
Quality Coring: None.									

Total Drill Time = 11.58 Hours
Average Penetration Rate = 11.23 Feet / Hour

Total Redrill Time = 15.33 Hours
Average Penetration Rate = 19.63 Feet / Hour

Verticality Information
At Full Depth = 1.0° South X 1.5° East
S-ARC North = 25.21"
S-ARC South = 31.77"

Quality Coring: None.

Comments: The side of hole upstream caved as hole was drilled past overburden trench causing a cave in side of hole.
Cavity 42-50', lost circulation at 49'. Caved in from 123' to 15 feet on 10/19/93.
Platform collapsed upstream requiring 99 cy of grout to fill.

Primary Pile #715
Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
01/29/94	1	DHD130A	43						
03/04/94	2	XL-24	130	43					
Total Drill Time = 11.58 Hours									
Average Penetration Rate = 11.23 Feet / Hour									
Total Redrill Time = 15.33 Hours									
Average Penetration Rate = 19.63 Feet / Hour									
Verticality Information									
At Full Depth = 3.0° North X 4.5° East									
S-ARC North = 31.77"									
S-ARC South = 20.88"									
Quality Coring: None.									
Comments:									

Total Drill Time = 11.58 Hours
Average Penetration Rate = 11.23 Feet / Hour

Total Redrill Time = 15.33 Hours
Average Penetration Rate = 19.63 Feet / Hour

Verticality Information
At Full Depth = 3.0° North X 4.5° East
S-ARC North = 31.77"
S-ARC South = 20.88"

Quality Coring: None.

Comments:

Secondary Pile #716
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/11/93	1	DHD130A	130		8.25		15.76			10/12/93		36	30.4	18.6%

CUT - OFF WALL EXCAVATION				CUT - OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)						
10/14/93	1	240	130		7.92		16.41	10/15/93			36	30.4	18.6%

Vertically Information	At Full Depth =	0° North / South X 1.5" West
	S-ARC North =	22.12"
	S-ARC South =	18.78"

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/04/94	1	DHD130A		38		2.13		17.84	02/08/94	35			8.9	294.4%
02/16/94	2	XL-24		65	38	1.17	0.83	23.08	02/16/94	22			15.2	44.9%
03/06/94	2	XL-24		130	65	3.08	1.67	21.10	03/07/94			34	30.4	12.0%

Vertically Information

At Full Depth =	4.75" South X 1.75" East
S-ARC North =	18.78"
S-ARC South =	35.32"

Comments: Connected with pile 713, both holes grouted simultaneously.

Secondary Pile #720
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/16/93	1	XL-24	44		1.17		37.61		10/16/93			9.0	10.3	-12.4%
01/27/94	1	DHD130A	30	30		1.67	17.96		01/28/94	30	2.3		7.0	361.1%
02/23/94	2	XL-24	131	44	3.58	0.75	24.30	58.67	02/23/94			34	30.6	11.1%

Total Drill Time = 4.75 Hours
Average Penetration Rate = 27.58 Feet / Hour

Total Redrill Time = 2.42 Hours
Average Penetration Rate = 30.58 Feet / Hour

Verticality Information
At Full Depth = 2.0" North X 2.5" East
S-ARC North = 35.32"
S-ARC South = 22.11"

Quality Coring: None.

Comments: Connected with pile 696.

Primary Pile #721
Area "D"

CUT -OFF WALL EXCAVATION										CUT -OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non -Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
02/02/94	1	DHD130A	60		2.78		21.58			02/02/94	18			14.0	28.5%
03/02/94	2	DHD130A	130	60	5.08	3.25	13.78	18.46		03/02/94			34	30.4	12.0%

Total Drill Time = 7.86 Hours
Average Penetration Rate = 16.54 Feet / Hour

Total Redrill Time = 3.25 Hours
Average Penetration Rate = 18.46 Feet / Hour

Verticality Information
At Full Depth = 1.0" South X 1.0" East
S-ARC North = 22.11"
S-ARC South = 29.88"

Quality Coring: None.

Comments:

Secondary Pile #722
Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
10/18/93	2	240	47		1.84		25.54		
02/19/94	2	DHD130A	130	47	6.18	2.57	13.43	18.29	

Total Drill Time = 8.02 Hours
Average Penetration Rate = 16.21 Feet / Hour

Total Redrill Time = 2.57 Hours
Average Penetration Rate = 18.29 Feet / Hour

Verticality Information
At Full Depth = 1.5" North X 2.0" West
S-ARC North = 29.88"
S-ARC South = 21.31"

Quality Coring: None.

Comments:

Primary Pile #723
Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)
02/02/94	1	DHD130A	60		3.75		16.00		
03/10/94	2	XL-24	130	60	3.08	1.50	22.73	40.00	

Total Drill Time = 6.83 Hours
Average Penetration Rate = 19.03 Feet / Hour

Total Redrill Time = 1.50 Hours
Average Penetration Rate = 40.00 Feet / Hour

Verticality Information
At Full Depth = 2.0" South X 3.0" West
S-ARC North = 21.31"
S-ARC South = 29.02"

Quality Coring: None.

Comments:

Secondary Pile #724
Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
10/21/94	1	DHD130A	60		3.58		16.76		01/26/94
02/25/94	2	DHD130A	130	60	5.33	2.50	13.13	24.00	02/25/94

Total Drill Time = 8.91 Hours
Average Penetration Rate = 14.59 Feet / Hour

Total Redrill Time = 2.50 Hours
Average Penetration Rate = 24.00 Feet / Hour

Vertically Information
At Full Depth = 0' North / South X 1.0' East
S--ARC North = 29.02"
S--ARC South = 23.76"

Quality Coring: None.
Comments:

Primary Pile #725
Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	
02/03/94	1	DHD130A	60		2.25		26.67		02/04/94
03/04/94	2	XL-24	130	60	2.67	1.67	26.22	35.93	03/05/94

Total Drill Time = 4.92 Hours
Average Penetration Rate = 26.42 Feet / Hour

Total Redrill Time = 1.67 Hours
Average Penetration Rate = 35.93 Feet / Hour

Vertically Information
At Full Depth = 2.0' South X 0' East / West
S--ARC North = 23.76"
S--ARC South = 28.12"

Quality Coring: None.
Comments:

Secondary Pile #726
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
01/28/94	1	DHD130A	30		1.08		27.78		01/29/94	12	23		7.0	104.1%					
02/21/94	2	DHD130A	60	30	1.80	0.73	16.67	41.10	02/22/94	40			14.0	185.9%					
02/26/94	2	XL-24	131	60	3.00	0.80	23.67	75.00	02/28/94			38	30.6	24.2%					

Total Drill Time = 5.88 Hours
Average Penetration Rate = 22.28 Feet / Hour

Total Redrill Time = 1.53 Hours
Average Penetration Rate = 58.82 Feet / Hour

Vertically Information
At Full Depth = 1.0' South X 1.0' East
S--ARC North = 28.12"
S--ARC South = 26.64"

Quality Coring: None.

Comments:

Primary Pile #727
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
02/14/94	1	DHD130A	63		3.20		19.69		02/14/94				14.7	165.1%					
03/07/94	2	XL-24	130	63	2.50	1.33	26.80	47.37	03/10/94	39		35	30.4	15.3%					

Total Drill Time = 5.70 Hours
Average Penetration Rate = 22.81 Feet / Hour

Total Redrill Time = 1.33 Hours
Average Penetration Rate = 47.37 Feet / Hour

Vertically Information
At Full Depth = 0.75' South X 3.0' West
S--ARC North = 26.64"
S--ARC South = 27.20"

Quality Coring: None.

Comments:

Secondary Pile #728
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/08/94	1	DHD130A	61		4.91		12.42		02/08/94	15			14.2	5.3%
03/02/94	2	DHD130A	130	61	4.92	2.17	14.02	28.11	03/03/94			34.5	30.4	13.6%

Total Drill Time = 9.83 Hours
Average Penetration Rate = 13.22 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 28.11 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 1.5° East
S-ARC North = 27.20°
S-ARC South = 23.78°

Quality Coring: None.
Comments:

Primary Pile #729
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
02/17/94	2	DHD130A	67		4.66		14.38		02/17/94	64			15.6	309.1%	
03/11/94	2	XL-24	131		2.42	1.58	26.45	42.41	03/12/94			34	30.6	11.1%	

Total Drill Time = 7.08 Hours
Average Penetration Rate = 18.50 Feet / Hour

Total Redrill Time = 1.58 Hours
Average Penetration Rate = 42.41 Feet / Hour

Verticality Information
At Full Depth = 2.0° South X 2.25° East
S-ARC North = 23.78°
S-ARC South = 27.83°

Quality Coring: None.
Comments: 2/17/94 34 cu. yd. re-pour of grout due to lost bit.

Secondary Pile # 730
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/27/94	1	DHD130A	27		1.17		23.08		01/27/94	21			6.3	233.1%
02/23/94	2	DHD130A	65		1.42		26.76		02/23/94	22			15.2	44.9%
03/02/94	1	DHD130A	130		5.83		11.15		03/02/94			35	30.4	15.3%

Total Drill Time = 8.42 Hours
Average Penetration Rate = 15.44 Feet / Hour
Total Redrill Time = 3.76 Hours
Average Penetration Rate = 24.47 Feet / Hour

Vertically Information
At Full Depth = 1" South X 1" West
S-ARC North = 23.78
S-ARC South = 28.15

Quality Coring: None.

Comments:

Primary Pile # 731
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/11/94	2	DHD130A	56		3.47		16.14		02/11/94	54			13.1	312.9%
03/06/94	1	XL-24	131		2.67		28.09		03/07/94			34	30.6	11.1%

Total Drill Time = 6.14 Hours
Average Penetration Rate = 21.34 Feet / Hour
Total Redrill Time = 1.25 Hours
Average Penetration Rate = 44.80 Feet / Hour

Vertically Information
At Full Depth = 0" N/S X 1.5" West
S-ARC North = 28.15
S-ARC South = 28.43

Quality Coring: None.

Comments:

Secondary Pile # 732
Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/24/94	1	DHD130A	25		1.17		21.37		01/25/94	18			5.8	208.3%
01/29/94	1	DHD130A	31	25	0.27	0.53	22.22	47.17	01/29/94	12	1		7.2	79.6%
02/19/94	1	DHD130A	65	31	1.75	1.08	19.43	28.70	02/19/94	20			15.2	31.8%
02/24/94	2	XL-24	131	31	2.92	1.25	34.25	24.80	02/26/94			34	30.6	11.1%

Secondary Pile # 734
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/26/94	1	DHD130A	29		1.42		20.42		01/26/94	12			6.8	77.2%
02/16/94	2	XL-24	65	29	1.08	0.58	33.33	50.00	02/16/94	37			15.2	143.8%
02/24/94	2	DHD130A	130	65	4.59	2.08	14.16	31.25	02/24/94			35.5	30.4	16.9%

Total Drill Time = 7.09 Hours
Average Penetration Rate = 18.34 Feet / Hour

Total Redrill Time = 2.66 Hours
Average Penetration Rate = 35.34 Feet / Hour

Verticality Information
At Full Depth = 1.5" South X .5" West
S-ARC North = 28.42
S-ARC South = 28.77

Quality Coring: None.

Comments:

Primary Pile # 735
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/02/94	1	DHD130A	56		3.25		17.23		02/03/94	16			13.1	22.4%
03/04/94	2	DHD130A	131	56	4.17	2.67	17.99	20.97	03/05/94			33.5	30.6	9.5%

Total Drill Time = 7.42 Hours
Average Penetration Rate = 17.65 Feet / Hour

Total Redrill Time = 2.67 Hours
Average Penetration Rate = 20.97 Feet / Hour

Verticality Information
At Full Depth = 0" N/S X 2" West
S-ARC North = 20.34
S-ARC South = 28.13

Quality Coring: None.

Comments:

Secondary Pile # 736
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
01/24/94	1	DHD130A	27		0.58		46.55			01/25/94	24			6.3	280.7%
01/27/94	1	DHD130A	30	27	0.50	0.25	6.00	108.00		01/28/94	12			7.0	71.3%
02/15/94	1	XL-24	65	30	1.03	0.67	33.98	44.78		02/15/94	44			15.2	189.9%
02/22/94	2	XL-24	130	65	2.75	1.17	23.64	55.56		02/22/94			35.5	30.4	16.9%

Total Drill Time = 4.88 Hours
Average Penetration Rate = 26.75 Feet / Hour

Total Redrill Time = 2.09 Hours
Average Penetration Rate = 58.37 Feet / Hour

Verticality Information
At Full Depth = 1" North X 3" West
S-ARC North = 28.77
S-ARC South = 25.04

Quality Coring: Non NQ from 0' to 12'

Comments:

Primary Pile # 737
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
02/08/94	1	DHD130A	60		2.42			24.79	02/08/94	74			14.0	428.2%	
03/07/94	2	XL-24	130	60	3.16	1.67	22.15	35.93	03/10/94			35	30.4	15.3%	

Total Drill Time = 5.58 Hours
Average Penetration Rate = 23.30 Feet / Hour

Total Redrill Time = 1.67 Hours
Average Penetration Rate = 35.93 Feet / Hour

Verticality Information
At Full Depth = 0" N/S X 0" E/W
S-ARC North = 28.13
S-ARC South = 26.76

Quality Coring: None.

Comments: Hole caved in to 30'

Secondary Pile # 738
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/22/94	1	DHD130A	53		2.67		19.85		09/22/94		17		12.4	37.4%
02/01/94	1	DHD130A	53			1.00	0.00	53.00	02/02/94	18			12.4	45.4%
02/28/94	1	DHD130A	130		5.50	1.25	14.00	42.40	03/01/94			36.5	30.4	20.2%

Total Drill Time = 8.17 Hours
Average Penetration Rate = 15.91 Feet / Hour

Total Redrill Time = 2.25 Hours
Average Penetration Rate = 47.11 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 28.13
S-ARC South = 26.76

Quality Coring: None.

Comments: Guide wall cracked; Hole fell in to 17'on 9/22/94. Cavity at 53' - Stopped hole

CONFORMING PILE DATA

Conforming Pile # 26-27
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/03/92	1	DHD130A	82		7.33		11.19		05/07/93			21	19.1	9.7%

Total Drill Time = 7.33 Hours
Average Penetration Rate = 11.19 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information At Full Depth = 2.5" South X 1" East

Quality Coring: None.

Comments:

Conforming Pile # 40-41
Area "A"

CUT - OFF WALL EXCAVATION										CUT - OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non - Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HRS)	Redrill (FT / HRS)						
05/04/93	1	DHD130A	153		14.92		10.25		05/12/93			40	35.7	12.0%

Total Drill Time = 14.92 Hours
Average Penetration Rate = 10.25 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" South X 2.25" East
S-ARC North =
S-ARC South =

Quality Coring: None.

Comments:

Conforming Pile # 50-51
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
05/05/93	1	DHD130A	150		14.08		10.65			05/18/93			38	35.0	8.5%

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/06/93	2	XL-24	150		5.08			29.53		01/10/94		40	35.0	14.2%

Total Drill Time = 5.08 Hours
Average Penetration Rate = 29.53 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

Vertically Information

At Full Depth =	2.01" N X 1.63" W
CORD North =	21.18"

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/09/93	2	DHD130A	150		11.00			13.64	06/12/93			39.5	35.0	12.8%

Total Redrill Time = None

Verticality Information
At Full Depth = 1.5" S X 4.25" E

Quality Coring: None.

Conforming Pile # 68-69
Area "A"

CUT - OFF WALL EXCAVATION							CUT - OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)					
01/02/94	2	XL-24	151		5.92		25.51		01/10/94		39	35.3	10.6%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/07/94	2	XL-24	151		4.58		32.97		01/10/94			39	35.3	10.6%

Total Redrill Time =
Average Penetration Rate =
None

Comments:

Conforming Pile # 83-84
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
06/21/94	1	DHD130A	150		8.75		17.14		14.2%

Total Drill Time = 8.75 Hours
Average Penetration Rate = 17.14 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.25" N X 2.5" W
CORD North = 29.86
S-ARC South =

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate			Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
			Drill (FT)	Redrill (FT)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)				Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)
06/19/93	2	DHD130A	150		11.67		12.85		06/21/93	40	35.0	14.2%

Total Redrill Time = None

Total Redrill Time =
Average Penetration Rate =

At Full Depth = 3.25" S X 3.75" E
CORD North = 23.91"
S-ARC South =

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/09/93	2	DHD130A	150		10.42			14.40	06/10/93			40	35.0	14.2%

Total Redrill Time = None

Total Redrill Time =
Average Penetration Rate =

At Full Depth = 2.75" N X 2" W
CORD North = 29.96"
S-ARC South =

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/15/93	2	XL-24	150		8.83		16.99		06/16/93	40	35.0	14.2%		

Total Drill Time = 8.83 Hours
Average Penetration Rate = 16.99 Feet / Hour

Total Redrill Time =
Average Penetration Rate =
None

Verticality Information

At Full Depth =	1" N X 1.75" W
CORID North =	28.99
S--ARC South =	

Quality Coring: None.

Comments:

Conforming Pile # 135-136
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/10/93	2	DHD130A	150		9.34		16.06		06/11/93			40	35.0	14.2%

Total Drill Time = 9.34 Hours
Average Penetration Rate = 16.06 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 5° W
CORD North = 28.44"
S-ARC South =

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/09/93	2	DHD130A	150		11.42		13.13		06/09/93			40	35.0	14.2%

Total Drill Time.=
Average Penetration Rate =

Total Redrill Time = None

Verticality Information

At Full Depth =	1.5" N X 2.25" W
S-ARC North =	28.82"
S-ARC South =	

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Theoretical Volume (CU.YD.)	Overbreak		
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date			Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)
01/10/93	2	XL-24	171		5.91			28.93			44	39.9	10.2%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Conforming Pile #J-502-503
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment		Drill Footage		Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
08/04/94	1	DHD130A	185		12.83		14.42			08/05/94			47	43.2	8.8%

Total Drill Time = 12.83 Hours
Average Penetration Rate = 14.42 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 6.0° South X 9.0° West
Chord, North = 21.0°
Chord, South = 31.44°

Quality Coring: None.

Comments:

Conforming Pile #J 505-506
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
09/01/94	2	XL-24	185		11.00			16.82		08/03/94			47	43.2	8.8%

Total Drill Time = 11.00 Hours
Average Penetration Rate = 16.82 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.0° North X 4.25° East
Chord, North = 26.78°
Chord, South = 24.03°

Quality Coring: None.

Comments:

Conforming Pile #J 512-513
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Overbreak
08/25/94	1	DHD130A	185		8.33		22.21		8.8%

Total Drill Time = 8.33 Hours
Average Penetration Rate = 22.21 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° North / South X 0° East / West
Chord North = 29.67"
Chord South = 29.67"

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/10/94	2	DHD130A	185		9.83		18.82			47	43.2	8.8%		

Total Redrill Time =
Average Penetration Rate =
None

Comments:

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/03/94	2	DHD130A	185		13.60		13.60		08/04/94			47	43.2	8.8%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/08/94	2	DHD130A	185		12.25		15.10		08/09/94			47	43.2	8.8%

Total Redrill Time =
Average Penetration Rate =
None

Quality Coring: None.

Comments:

Conforming Pile #J 573-574
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment		Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/15/94	1	DHD130A	185		10.42		17.75		08/18/94			47	43.2	8.8%

Total Drill Time = 10.42 Hours
Average Penetration Rate = 17.75 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° North / South X 2.5° East
S-ARC North =
S-ARC South =

Quality Coring: None.

Comments:

Conforming Pile #J 610-611
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Overbreak
08/24/94	1	DHD130A	185		13.30		13.91		4.2%

Total Drill Time = 13.30 Hours
Average Penetration Rate = 13.91 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° North / South X 0° East / West
Chord North = 27.82"
S-ARC South = 28.81"

Quality Coring: None.

Comments:

PRODUCTION RATES

SUPERDRILL PRODUCTION RATES AT DIKE 1 FOR DIFFERENT MATERIALS
(USING A DHD130A BIT)

ROCK TYPE	STRENGTH (PSI)	AVG. DRILLING RATE (Ft./Hr)
SANDSTONE (Sylamore)	Range (7,142 – 26,938) Avg. 12,800	2 (with cluster bit rate increased to 6 ft/hr)
DOLOMITE AND CHERTY LIMESTONE	Range (1,632 – 27,378) Avg. 10,000	14
BROKEN & WEATHERED LIMESTONE	---	27 (Varies Greatly)
CONCRETE	Avg. 3,000	22